Exhibit 18

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF VIRGINIA
BIG STONE GAP DIVISION

WILLIAM THORPE, *et al.*, *Plaintiffs*, v. VIRGINIA DEPARTMENT OF CORRECTIONS, *et al.*, *Defendants*.	CASE NO. 2:20-cv-00007-JPJ-PMS

EXPERT REPORT OF CRAIG HANEY, Ph.D., J.D.

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I, Craig Haney, declare under penalty of perjury:

I. Role in This Case

1. I have been retained by counsel for Plaintiffs in *Thorpe., et al. v. Virginia Department of Corrections, et al.*, to analyze and form expert opinions about several inter-related issues: a) what prison conditions, practices, and procedures constitute what is commonly understood as "solitary confinement" in the scientific, legal and correctional community; b) the current state of scientific knowledge about the effects of solitary or isolated confinement on incarcerated persons; c) what is scientifically known about those effects for persons with mental illness, in particular, including whether and how negative consequences associated with solitary confinement are exacerbated for this group of prisoners; d) whether and to what degree existing scientific knowledge about the harmful effects of solitary confinement can be reasonably and justifiably applied to prisoners who are housed in units whose conditions, practices, and procedures are similar or identical to those that constitute solitary confinement; e) whether there is a reliable and widely-accepted methodology that I and other experts regularly employ to analyze class-wide issues relating to the harms of solitary confinement using common evidence (i.e., evidence that is common to class members); and f) whether, based on a review of key policies, procedures, and related documents, the specific conditions, practices, and procedures at issue in this case would expose the group

of prisoners subjected to them to the same risks of harm that are described in the scientific literature.

2. If called upon to testify, I could and would do so competently as follows.

II. Expert Qualifications

3. To briefly summarize my expert qualifications, I am an academic psychology professor, currently a Distinguished Professor of Psychology at the University of California, Santa Cruz. In addition to receiving a bachelor's degree from the University of Pennsylvania and a J.D. degree from the Stanford Law School, I was trained in and received a Ph.D. from a distinguished research-oriented graduate program in the Psychology Department at Stanford University. Since coming to the University of California many years ago, I have regularly taught graduate courses in research methods in the social psychology Ph.D. program. The social psychology graduate program at Santa Cruz is a doctoral program for which I also have served as Director (in addition to serving, at different points in my tenure at the university, as chair of the Department of Psychology, Department of Sociology, and director of the Program in Legal Studies). I am also a Distinguished Professor in the University of California system, a distinction reserved for professors who have reached the very highest level of the professoriate, after being nominated by our respective universities and

undergoing a national and international review. I recently served a several year term as a UC Presidential Chair, an honor awarded typically to a single professor on each University of California campus, in recognition of his or her scholarly distinction.

4. My area of academic specialization is in what is generally termed "psychology and law," which is the application of psychological data and principles to legal issues. I have published numerous scholarly articles and book chapters on topics in law and psychology, including encyclopedia and handbook chapters on the psychological effects of confinement in correctional settings (such as jails and prisons) and the nature and consequences of being housed in segregated or solitary-type confinement. In addition to these scholarly articles and book chapters, I have published three sole-authored books: *Death by Design: Capital Punishment as a Social Psychological System* (Oxford Univ. Press 2005); *Reforming Punishment: Psychological Limits to the Pains of Imprisonment* (2006); and, most recently, *Criminality in Context: The Psychological Foundations of Criminal Justice Reform* (2020). I was also a member of the National Academy of Sciences committee that co-authored *The Growth of Incarceration in the United States: Exploring the Causes and Consequences* (2014).[1]

[1] The committee's analyses and recommendations appear in: *The Growth of Incarceration in the United States: Exploring the Causes and Consequences* (with Jeremy Travis et al.). Report of the National Academy of Sciences Committee on the Causes and Consequences of High Rates of Incarceration in the United States, Washington, DC: National Academy Press (2014). Among other things, the committee's

5. In my capacity as an expert on the psychological effects of incarceration, I also have served as a consultant to numerous governmental, law enforcement, and legal agencies and organizations on jail-and prison-related issues. In addition to having served on a joint American Bar Association/American Association for the Advancement of Science National Conference of Lawyers and Scientists and the White House Forum on the Uses of Science and Technology to Improve National Crime and Prison Policy, as I noted above, I more recently served as a member of a committee of the nation's most esteemed scientific organization, the National Academy of Sciences. Our committee was charged with the responsibility of scientifically analyzing the causes and consequences of the high rates of incarceration in the United States and proposing recommendations for reform. I also testified before the United States Senate Judiciary Committee in a historic hearing held by Senator Richard Durbin on the nature and consequences of solitary confinement.

6. I have spent approximately five decades studying the psychological effects of living and working in institutional environments, including juvenile facilities, mainline adult prison and jail settings, specialized correctional housing

jointly authored report analyzed the psychological and other effects of conditions of prison confinement, including solitary confinement. Once the report was finalized, I and other committee members briefed representatives of various governmental agencies, including members of Congress and their staffs and the President's Domestic Policy Council, on our findings and recommendations.

units (such as solitary and "supermax"-type confinement), and immigration detention facilities. In the course of that work, I have toured and inspected numerous jails and prisons and related facilities (in Alabama, Arkansas, Arizona, California, Florida, Georgia, Hawaii, Idaho, Illinois, Louisiana, Maine, Massachusetts, Mississippi, Montana, Nevada, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, and Washington), many maximum security federal prisons (including the Administrative Maximum or "ADX" facility in Florence, Colorado), and prisons in Canada, Cuba, England, Ireland, Hungary, Mexico, Netherlands, and Norway. I also have conducted numerous interviews with many hundreds of correctional officials, officers, and incarcerated persons to assess the impact of penal confinement, and analyzed aggregate data from correctional documents and other official records to examine the effects of specific conditions of confinement on the quality of institutional life and the ability of persons housed there to adjust to them. I estimate that I have toured and inspected, and interviewed persons housed in solitary confinement units in one or multiple facilities in approximately twenty different state prison systems as well as many federal prisons.

7. I also have been qualified and have testified as an expert in various federal courts, including: United States District Courts in Alabama, Arkansas, Arizona, California, Georgia, Louisiana, New Mexico, North Carolina,

Pennsylvania, Texas, and Washington, and in numerous state courts, including courts in Arizona, Colorado, Florida, Montana, New Jersey, Nevada, New Mexico, Ohio, Oregon, Tennessee, Utah, and Wyoming. My research, writing, and testimony have been cited by state courts, including the California Supreme Court, and by Federal District Courts, Circuit Courts of Appeal, and the Supreme Court of the United States.[2]

8. A copy of my current curriculum vitae is attached to this Report as Appendix A. A statement of my compensation in this case and a list of cases in which I have testified in the last four years is attached to this Report as Appendix B.

III. Basis of Expert Opinion

9. My opinions in the present Report are based on a number of sources, including a review of the extensive and current published literature that addresses the psychological effects of solitary confinement, literature that addresses the legally relevant forms of psychological vulnerability of mentally ill persons. I have reviewed key Virginia Department of Corrections policies, key operating procedures and documents concerning the Step-Down Program, affidavits from Plaintiffs detailing their experiences in confinement, and other documents

[2] For example, see *Brown v. Plata*, 563 U.S. 493 (2011); *see also* Appendix A which includes a list of some of the prison conditions cases on which I have worked.

produced in this case. In addition, I have drawn on my over 40 years of experience studying, inspecting, and evaluating prison conditions, including conditions of solitary confinement, and conducting interviews with correctional staff and incarcerated persons about the effects of the conditions, practices, and procedures to which they are subjects.

10. A copy of the materials I reviewed is attached to this Report as Appendix C.

IV. Summary of Expert Opinions

11. By way of summary, it is my expert opinion that the conditions of confinement in the Virginia Department of Corrections that were described in the documents I reviewed and the photographs I examined clearly constitute what is meant in the scientific, correctional, and legal literature by the term "solitary confinement."

12. It is also my expert opinion that being housed in solitary confinement is known to produce a number of negative psychological effects and to place incarcerated persons[3] at significant risk of serious psychological harm. These effects are clearly and consistently described in the scientific literature. These harmful effects are now widely accepted and well-understood; they have been for a

[3] I will use the terms "prisoners" and "incarcerated persons" interchangeably in this Report to refer to persons who are incarcerated or detained in correctional facilities. The scientific and professional literature typically uses these terms in the same way.

number of years. Indeed, there is a broad scientific and professional consensus to this effect. In addition, the scientific knowledge about the harmful effects of solitary confinement is based on sound empirical research. The data are derived from a variety of methodological strategies that are entirely appropriate to the research task at hand (and are exactly the kind used in a wide variety of entirely legitimate scientific disciplines, including ones that have important, socially consequential applications). The findings from this research are "robust"—that is, they come from studies that were conducted by researchers and clinicians from diverse backgrounds and perspectives, were completed and published over a period of many decades, and are empirically very consistent. Indeed, their overwhelming import derives from the overall pattern of the results. With remarkably few exceptions, virtually every one of these studies has documented the pain and suffering that isolated prisoners endure and the risk of psychological harm that they confront.

13. In addition, the empirical findings are grounded in sound scientific theory. That is, there is a well-understood and widely accepted scientific framework that explains why long-term isolation, the absence of meaningful social interaction and activity, and the other severe deprivations that commonly occur in solitary confinement are harmful. This framework has been developed and validated through years of extensive scientific research documenting the various

ways in which social isolation in general produces adverse psychological effects in contexts other than prison—that is, in society at large. It establishes social isolation as a social and even physical stressor and risk factor, considered by a number of scientists to affect well-being and mortality as adversely as smoking, obesity, and physical inactivity. Of course, solitary confinement imposes conditions that are significantly harsher than those that prevail in society at large, exacerbating the harmfulness of isolation itself.

14. My own professional experience and study and the decades of scientific research that has been conducted by other scholars and researchers collectively have established that these kinds of conditions of confinement place all prisoners at significant risk of serious harm. In fact, this research demonstrates that solitary confinement can undermine the psychological health and well-being of all incarcerated persons exposed to them, regardless of their pre-existing mental health status.

15. In addition, the scientific research and related professional literature establishes that the risk of serious psychological harm is further heightened for persons who are mentally ill. The fact that incarcerated persons who suffer from mental illness are less able to tolerate the painful experience of isolation or solitary confinement is an extension of another widely accepted scientific framework. All other things equal, mentally ill persons are more susceptible in general to stressful

and traumatic experiences of the sort that occur more often in solitary confinement. In addition, many of the most prevalent adverse effects of isolation (such as depression) are similar to and aggravate many of the symptoms that are associated with various forms of mental illness, adding to or worsening already existing psychiatric conditions (such as anxiety or Post-Traumatic Stress Disorder). Finally, isolation removes people from the stabilizing and normalizing influence of social contact and social connection, undermining personal identity and one's sense of self. This is especially problematic for mentally ill persons whose contact with social reality may already be fragile and tenuous.

16. These facts also mean that any correctional system that places incarcerated persons, especially mentally ill persons, into solitary confinement, including even after they have experienced incidents of self-harming behavior, suicide attempts, or involuntary emergency hospitalizations in a mental health facility, is ignoring the fact that these incidents are very often themselves manifestations of the adverse consequence of placement in solitary confinement. Not only are mentally ill persons confined in solitary confinement placed at an especially heightened risk of serious harm, but any policy that returns mentally ill incarcerated persons to the very places that have hurt them is especially cruel and singularly inappropriate.

17. It is also my expert opinion that the scientifically established negative effects of solitary confinement, and the significant risk of serious harm they create, can be reasonably and justifiable applied to persons who are incarcerated within any individual prison facility or housing unit in which they are subjected to conditions, practices, and procedures that are similar or identical to what has been defined as "solitary confinement." It is also the case that the heightened risk of serious harm that solitary confinement represents for persons who are mentally ill reasonably and justifiably applies to persons in housing units that are similar or identical to what is defined as "solitary confinement." These statements apply to housing units within the Virginia Department of Corrections and any other prison system.

18. Finally, I conducted an initial assessment of the use of solitary confinement by the Virginia Department of Corrections based on key policies and procedures I have reviewed as well as the scientific, correctional, and legal literature described in my report. It is my opinion that the conditions, policies, and practices that characterize the Step-Down Program do constitute solitary confinement, as that term is used in this literature. Among other things, the materials I reviewed indicate that prisoners in the Step-Down Program can be kept indefinitely at the most restrictive steps in the Program, and must spend a minimum of either three or six months there, under severely isolating and

extremely deprived conditions. Prisoners in these initial steps are housed in cells that are furnished with only a bed and a toilet, and a slot on the door through which communication with prison officials may take place. Recently changed policy indicates that prisoners may receive as much as four hours per day of out-of-cell time, but prisoners report that that policy is often not followed. They also report that the other kind of out-of-cell time that is permitted consists of time spent in barren rec cages that resemble dog kennels, with the threatening presence of nearby K-9s (who have attacked or bitten them), or of other programming that is delivered to them in individual cages or when they are shackled at the wrists and ankles while sitting in "program chairs." These same overall conditions, practices, and procedures are also inflicted on mentally ill prisoners, who are at even greater risk of serious harm as a result of the isolation to which they subjected, and whose outwardly deteriorating mental conditions can significantly worsen the overall atmosphere in the housing units themselves.

19. These opinions expressed herein concerning the use, nature, and effects of isolated confinement in the VDOC are offered at the class certification stage of this litigation. It is my understanding that additional information will be forthcoming during the course of the litigation. For example, I have not been able to tour the VDOC facilities; interview staff or prisoners; or review prisoner files and other sets of potentially relevant documents. Nonetheless, based on the key

policies procedures, and the various documents that I have reviewed, I am able to formulate opinions about VDOC's isolation policies and practices at the class certification stage of this litigation. This is not a complete list of the opinions that I anticipate I will reach in this case and these opinions will be developed and supplemented as more information becomes available.

20. I will employ the same reliable, widely used methodology that I and other experts have regularly used to analyze class-wide issues relating to the harms of solitary confinement and to determine, in this instance, whether the Step-Down Program imposes conditions that are similar or identical to what is defined in the literature and in correctional practice as "solitary confinement." I will follow the procedure and standard methodology that I have employed for approximately the past forty-plus years, whenever I have been retained to evaluate and form opinions about conditions of confinement and policies and practices in correctional facilities or prison systems. Thus, I will review a wide range of documents that I will request from counsel for plaintiffs, including: various Virginia Department of Corrections policy documents; rosters of prisoners within restrictive housing; the movement histories, institutional files, medical and mental health files for the prisoners whom I will confidentially interview; various logbooks and incident reports; documents related to prisoner suicides that occurred in restrictive housing; various Step-Down

Program materials; and the case-related deposition transcripts of prisoners and Virginia Department of Corrections employees.

21. Additionally, I will tour and inspect the Red Onion State Prison facilities, conduct in-passing interviews with prison staff members, conduct cell-front interviews with prisoners, and conduct longer, individual, confidential interviews with prisoners. I will also review photographs taken during the tour and accompany my final report with photographs that depict representative areas of the facility. I also look forward to reviewing what I would expect to be a substantial amount of additional discovery material, including additional documents, deposition testimony, and other pertinent information. I have used these methods in other expert reports that have been relied upon by courts in many other cases. *See, e.g.*, *Brown v. Plata*, 563 U.S. 493 (2011); *Braggs v. Dunn*, 257 F. Supp. 3d 1171 (M.D. Ala. 2017); *Coleman v. Brown*, 28 F. Supp. 3d 1068 (E.D. Cal. 2014); *Ruiz v. Johnson*, 37 F. Supp. 2d 855 (S.D. Texas 1999); *Charles v. LeBlanc*, 5:18-cv-00541 (W.D. La., suit filed Feb. 20, 2018); *Davis v. Jeffreys*, 3:16-cv-00600 (S.D. Ill., suit filed June 2, 2016).

V. The Conditions, Practices, and Procedures That Constitute What is Meant by "Solitary Confinement" in the Scientific, Legal, and Correctional Literature

22. "Solitary confinement" is a generic term that encompasses a relatively wide range of prison housing arrangements to which various labels have been

applied. No matter the specific label that is applied (which include "administrative segregation," "close management," "security housing," "isolated confinement," and "restrictive housing"), in the scientific, legal, and correctional literature it is used to mean segregation from the mainstream prisoner population, in attached housing within a larger facility or in free-standing facilities devoted to such confinement.

23. Prisoners who are housed in what is commonly described as "solitary confinement" are typically involuntarily confined in their cells for upwards of 22 hours a day or more, given only extremely limited opportunities for direct, normal, meaningful social contact with other persons, having been placed there for a variety of reasons (including as disciplinary punishment or for other administrative reasons). In the definition employed by the National Institute of Corrections (NIC), as cited by Chase Riveland in a standard reference work on solitary-type confinement that was sponsored and disseminated by the United States Department of Justice, Riveland noted that the NIC itself had defined solitary or "supermax" housing as occurring in a "freestanding facility, or a distinct unit within a freestanding facility, that provides for the management and secure control of

inmates" under conditions characterized by "separation, restricted movement, and limited access to staff and other inmates."[4]

24. However, strictly speaking, whether someone is in "solitary confinement" is determined less by the amount of time they are forced to spend in their cells or the correctional rationale for placing them there than by the degree to which they are deprived of meaningful social contact and access to positive environmental stimulation, wherever and however those deprivations are imposed. Thus, as I have previously written:

> From a psychological perspective, "solitary confinement" is defined less by the purpose for which it is imposed (i.e., its correctional justification), or the exact amount of time during which prisoners are confined to their cells, than by the degree to which they are deprived of normal, direct, meaningful social contact and denied access to positive environmental stimulation and activity. Thus, even a regime incorporating a considerable amount of out-of-cell time during which a prisoner is simultaneously prohibited from engaging in normal, direct, meaningful social contact and positive stimulation or programming would still constitute a painful and potentially damaging form of solitary confinement. Especially in a prison context, the terms "normal"

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[4] Chase Riveland, *Supermax Prisons: Overview and General Considerations*, National Institute of Corrections: United States Department of Justice (1999), at 3, available at https://www.prisonpolicy.org/scans/NIC_014937.pdf. More recently, the Department of Justice employed a similar definition, noting that "the terms 'isolation' or 'solitary confinement' mean the state of being confined to one's cell for approximately 22 hours per day or more, alone or with other prisoners, that limits contact with others... An isolation unit means a unit where all or most of those housed in the unit are subjected to isolation." United States Department of Justice, *Letter to the Honorable Tom Corbett, Re: Investigation of the State Correctional Institution at Cresson and Notice of Expanded Investigation*, (May 31, 2013), at 5, available at http://www.justice.gov/crt/about/spl/documents/cresson_findings_5-31-13.pdf. The Department of Justice cites *Wilkinson v. Austin*, 545 U.S. 209, 214, 224 (2005), where the United States Supreme Court described solitary confinement as limiting human contact for 23 hours per day; and *Tillery v. Owens*, 907 F.2d 418, 422 (3d Cir. 1990), where the Third Circuit described it as limiting contact for 21 to 22 hours per day. *Id.*

> and "direct" mean that the contact itself is not mediated or obstructed by bars, restraints, security glass or screens, or the like. "Meaningful" refers to voluntary contact that permits purposeful activities of common interest or consequence that takes place in the course of genuine social interaction and engagement with others.[5]

25. It is also important to note in this context that the negative effects of solitary confinement derive primarily but not exclusively from the deprivation of meaningful social contact. As I will discuss at greater length later in this Report, social isolation and social exclusion, and the related experience of loneliness, have been extensively studied by scientific researchers in contexts outside of prison and determined to be extremely harmful, even dangerous to mental as well as physical health. However, it is also important to note that solitary confinement settings typically impose additional forms of deprivation—including the deprivation of property and access to programming and other forms of positive environmental stimulation that can significantly amplify or add to the deleterious effects of social isolation per se.

26. The additional deprivations typically imposed on prisoners in solitary confinement include severe limitations placed on the nature and amount of personal property prisoners may possess, the fact that they are afforded little or no access to positive environmental stimulation (such as through electronic devices or

[5] Craig Haney, *The Science of Solitary: Expanding the Harmfulness Narrative*, 115 NW. L. REV. 211, 212 n.1 (2020) [hereafter, "Haney, The Science of Solitary (2020)"]. A copy of this article is attached to this expert report as Appendix D.

appliances and contact with the natural environment), given extremely limited or non-existent to engage in the forms of treatment, programming, vocational training, and work in which mainline prisoners routinely participate, and suffer significant limitations on the nature and amount of visitation that they are permitted. In addition, there are typically a host of onerous security-related practices and procedures that govern the manner in which prison staff interact with and escort prisoners in solitary confinement.

27. Thus, throughout this Report, my use of the term "solitary confinement" is intended to refer to the combination of all of these forms of severe deprivations imposed on prisoners—primarily the deprivation of meaningful human social contact, as I have defined it, but also severe limitations on property, visitation, access to positive environmental stimulation, and the forms of treatment, programming, vocational training, and work in which mainline prisoners routinely participate.

VI. The Scientific Evidence that Solitary Confinement Places Persons at Significant Risk of Serious Harm

28. As I summarize in following paragraphs, systematic research documenting the significant risk of harm to which prisoners are exposed in solitary confinement extends over a period of many decades. There is historical evidence that led to the abandonment of the widespread use of solitary confinement, more

recent research conducted in the modern era of prison studies and, as I will show, a substantial body of very recent research that consistently document the harmful effects brought about by this practice.

1) A Brief Summary of Extensive Past Research Establishing the Harmful Effects of Solitary Confinement

29. As I summarize in the following paragraphs, systematic research documenting the significant risk of harm to which prisoners are exposed in solitary confinement extends over a period of many decades. In fact, knowledge about the substantial psychological risks associated with solitary confinement began to be amassed long before more systematic empirical research was conducted on the topic. Documented accounts of the harmfulness of the practice were prevalent in the 19th century, surfacing almost as soon as solitary confinement began to be used on a widespread basis in the very first penitentiaries in the United States. This knowledge was instrumental in helping to end the practice long before the turn of the 20th century.

a) Historical Knowledge About the Harmfulness of Solitary Confinement

30. In the mid-1800s, for example, the president of the New Jersey medical society and director of its mental hospital wrote about the adverse consequences of the "gloom of solitude" that befell the typical prisoner, who lived in isolation in the state penitentiary and "suffered greatly in body as well as mind,"

stating that the conditions there were "most effectual to drive [the prisoner] mad, or reduce him to imbecility, beside inducing organic diseases almost incurable."[6] Indeed, the warden of the nearby Rhode Island Penitentiary, who had been instructed to visit New Jersey to learn how to institute solitary confinement in his own prison, also expressed grave doubts about the practice to his state legislature, noting that: "Of the thirty-seven convicts who have been committed to the prison, six have become insane. Several others have, at times, exhibited slight symptoms of derangement."[7]

31. The second half of the 19th century is replete with accounts much like these, chronicling the disastrous psychological and other consequences that befell persons placed in solitary confinement. They led prison officials in the United States to relatively quickly modify the use of this draconian prison practice and to implement forms of imprisonment that did not depend on the isolation of prisoners. In fact, the United States Supreme Court opined in 1890 that "it is within the memory of many persons interested in prison discipline that some 30 or 40 years ago the whole subject attracted the general public attention, and its main feature of

[6] Dr. James B. Coleman, Report of the Joint Committee on the State Prison accounts, with the Inspector's and Physician's report, 2(4) PENN. J. OF DISCIPLINE AND PHILANTHROPY (Oct. 1846).

[7] Wines, D., & Dwight, T., Report on Prisons and Reformatories in the United States and Canada Made to the Legislature of New York, at 54 (1867).

solitary confinement was found to be too severe."[8] The Court noted further that "[i]n Great Britain, as in other countries, public sentiment revolted against this severity and… the additional punishment of solitary confinement was repealed."[9]

32. Solitary confinement—at least as a long, rather than short-term punishment—remained more or less "repealed" in the United States for the better part of the 20th century. With the exception of the notorious federal penitentiary on Alcatraz Island, solitary confinement was used mostly as a disciplinary sanction of brief duration. Indeed, by 1925 a *New York Times* commentator observed that solitary confinement had "been abandoned everywhere, even in Pennsylvania," where it had originated.[10] By the late-1950s, when sociologist Gresham Sykes published what is generally regarded as the classic discussion of the nature of life inside a maximum-security U.S. prison, *Society of Captives*,[11] he made only passing reference to solitary confinement. Sykes reported that the practice was reserved only as an "ultimate penalty" for rule violations. Indeed, his list of the various punishments that were imposed for an array of disciplinary infractions that were committed during a presumably typical week at the prison confirmed that

[8] *In re Medley*, 134 U.S. 160, 168 (1890).

[9] *Id.* at 170.

[10] Edward Smith, *Prisons Cannot Keep Pace with Criminals*, New York Times, at 5 (Oct. 4, 1925).

[11] Gresham Sykes, The Society of Captives: A Study of a Maximum Security Prison (1958; 2007).

solitary confinement was very sparingly employed. For example, Sykes's list indicated that the offense of "possession of a homemade knife" resulted in no more than "5 days in segregation with a restricted diet."[12] Although it was not a prominent feature of prison life, Sykes clearly understood the harmfulness of solitary confinement. He wrote early in *Society of Captives* that "[i]n a very fundamental sense, a man perpetually locked by himself in a cage is no longer a man at all; rather, he is a semi-human object, an organism with a number." He quoted fellow sociologist Kingsley Davis, to the effect that "the structure of the human personality is so much a product of social interaction that when this interaction ceases it tends to decay."[13]

b) Documenting the Harmfulness of Solitary Confinement in the Modern Era

33. Needless to say, times and conditions have changed since the earliest solitary confinement units were in operation in the United States and elsewhere. Even since Sykes's time, the introduction of technology and different architectural designs have modernized solitary confinement units and significantly improved and upgraded physical conditions. Yet, the essence of the experience—the nearly total, forced deprivation of meaningful social contact—remains much the same. In

[12] *Id.* at 43.

[13] *Id.* at 6.

the modern history of solitary confinement, as prisons in the United States became increasingly overcrowded in the 1970s, correctional administrators began to turn back to the much-discredited practice of placing prisoners in longer-term isolation, in theory as a way of controlling the unprecedented and rapid influx of prisoners coming into systems largely unprepared to receive them. As the use of solitary confinement became more widespread, it once again became a topic of significant academic and legal interest. Since then, a substantial body of published literature has clearly documented distinctive specific indices and broader patterns of psychological harm. The specific indices and broader patterns of harm have been consistently identified through a variety of research methods, including personal accounts written by persons confined in isolation, descriptive studies authored by mental health professionals who worked in many such places, and systematic research conducted on the nature and effects of solitary confinement.

34. By now, these research findings are very robust—spanning many decades, conducted by researchers from different geographical locations, with different disciplinary backgrounds, employing different methods of study, but virtually all reaching the same conclusions about the harmfulness of solitary confinement.[14] Of course, the "perfect" study of the effects of solitary confinement

[14] There are a few "outlier" studies that report null effects. The one most often cited by the very few commentators who continue to defend the use of solitary confinement against claims of significant risk of serious harm, the so-called "Colorado Study" [Maureen O'Keefe, Kelli Klebe, Alysha Stucker, Kristin Sturm, & William Leggett, *One Year Longitudinal Study of the Psychological Effects of Administrative*

would be relatively straightforward to design but impossible to implement. The realities of prison life and the practical and ethical challenges of conducting research in prisons (including, for example, "random assignment" to conditions) would prevent such a study from ever being conducted.

35. In fact, more than a decade ago, I wrote:

> No more than basic knowledge of research methodology is required to design the "perfect" study of the effects of solitary confinement: dividing a representative sample of prisoners (who had never been in solitary confinement) into two groups by randomly assigning half to either a treatment condition (say, two or more years in solitary

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Segregation, National Institute of Justice (2010), hereafter, "O'Keefe et al., 2010"] has so many insurmountable methodological flaws that its reported "results" are actually uninterpretable. I will discuss this study in more detail later in this report. For a lengthy discussion of the methodological flaws and a discussion of why and how they render the study's results not only flawed but uninterpretable, see Craig Haney, *The Psychological Effects of Solitary Confinement: A Systematic Critique*, 47 Crime & Just. 365 (2018) (hereafter, "Haney, A Systematic Critique (2018)"). In addition to my criticisms, the study has been roundly criticized by many other prominent solitary confinement experts, including two, David Lovel and Hans Toch, who called its findings "flabbergasting." David Lovell & Hans Toch, *Some Observations about the Colorado Segregation Study*, 13(1) Correctional Mental Health Report, at 3–4, 14 (2011). In addition, see Stuart Grassian & Terry Kupers, *The Colorado Study versus the Reality of Supermax Confinement*, 13(1) Correctional Mental Health Report, at 1, 9–11 (2011); Lorna Rhodes & David Lovell, *Is Adaptation the Right Question? Addressing the Larger Context of Administrative Segregation: Commentary on One Year Longitudinal Study of the Psychological Effects of Administrative Segregation*, Corrections and Mental Health: An Update of the National Institute of Corrections (June 21, 2011), available at http://community.nicic.gov/cfs-file.ashx/__key /CommunityServer.Components.PostAttachments/00.00.05.95.19/Supermax-_2D00_-T-_2D00_-Rhodes-and-Lovell.pdf; Sharon Shalev & Monica Lloyd, *If This Be Method, Yet There Is Madness in It: Commentary on One Year Longitudinal Study of the Psychological Effects of Administrative Segregation*, Corrections and Mental Health: An Update of the National Institute of Corrections (June 21, 2011), available at http://community.nicic.gov/cfs file.ashx/__key/CommunityServer.Components.PostAttachments /00.00.05.95.21/Supermax-_2D00_-T-_2D00_-Shalev-and-Lloyd.pdf; and Peter Scharff Smith, *The Effects of Solitary Confinement: Commentary on One Year Longitudinal Study of the Psychological Effects of Administrative Segregation*, Corrections and Mental Health: An Update of the National Institute of Corrections (June 21, 2011), available at http://community.nicic.gov/cfs-file.ashx/__key/CommunityServer.Components.PostAttachments/00.00.05.95.22/Supermax-_2D00_-T-_2D00-Smith.pdf. Obviously, any study that used data from the Colorado Study, or any meta-analysis that relied heavily on its uninterpretable data, would be similarly compromised by its fatal and other methodological flaws.

> confinement) or a control condition (the same length of time residing in a typical prison housing unit), and conducting longitudinal assessments of both groups (i.e., before, during, and after their experiences), by impartial researchers skilled at gaining the trust of prisoners (including ones perceived by the prisoner-participants as having absolutely no connection to the prison administration). Unfortunately, no more than basic knowledge of the realities of prison life and the practicalities of conducting research in prisons is required to understand why such a study would be impossible to ever conduct. Moreover, any prison system that allowed truly independent, experienced researchers to perform even a reasonable approximation of such a study would be, almost by definition, so atypical as to call the generalizability of the results into question. Keep in mind also that the assessment process itself—depending on who carried it out, how often it was done, and in what manner—might well provide the solitary confinement participants with more meaningful social contact than they are currently afforded in a number of such units with which I am familiar, thereby significantly changing (and improving) the conditions of their confinement.[15]

36. It is my opinion that commentators who ignore these facts about the impossibility of doing such a perfect study, and would dismiss the extensive scientific knowledge that has been accumulated about the harmful effects of solitary confinement because it is not based on a type of research that simply cannot be conducted in prisons, are insisting on an unobtainable methodological standard that not only would essentially end prison research (and prison litigation) but also undermine the value of a vast amount of scientific knowledge that has been acquired in numerous non-laboratory, non-experimental scientific disciplines,

[15] Craig Haney, The Social Psychology of Isolation: Why Solitary Confinement Is Psychologically Harmful, 181 PRISON SERV. J. 12-20 (2009), at 13 n.8.

including in the social sciences (e.g., anthropology, economics, political science, and sociology), physical sciences (e.g., astronomy, botany, geology) and many areas of medicine (e.g., epidemiology, psychiatry). All of these perfectly legitimate scientific endeavors—that produce extremely important, socially consequential knowledge on which society regularly relies—are similarly constrained from conducting pure experiments and depend instead on systematic, naturalistic observation and scientifically justified inferences drawn from patterns of correlational data.[16]

37. Notwithstanding the lack of a "perfect" study on solitary confinement, there are numerous direct studies of solitary confinement—so numerous that any detailed discussion of all of them in this report would be prohibitively lengthy (but the results of which are summarized in numerous literature reviews published since the late 1990s, as referenced in the below footnote).[17]

[16] For a more in-depth discussion of these issues in prison research and an extended example of the problems that can arise when researchers proceed as if they had the same control over research in a prison as in a laboratory, when they clearly do not, *see* Haney, A Systematic Critique (2018), *supra* note 14.

[17] Summaries of the key findings from the key studies are contained in numerous literature reviews published over the last 25 years. For example, see Bruce Arrigo & J. Bullock, *The Psychological Effects of Solitary Confinement on Prisoners in Supermax Units: Reviewing What We Know and What Should Change*, 52 INT'L J. OFFENDER THERAPY & COMP. CRIMINOLOGY 622-640 (2008); Kristin Cloyes, David Lovell, David Allen & Lorna Rhodes, *Assessment of Psychosocial Impairment in a Supermaximum Security Unit Sample*, 33 CRIM. JUST. & BEHAV., 760-781 (2006); Stuart Grassian, *Psychiatric Effects of Solitary Confinement*, 22 WASH. U. J. L. & POL. 325-383 (2006); Craig Haney, *Mental Health Issues in Long-Term Solitary and "Supermax" Confinement*, 49 CRIME & DELINQ. 124-156 (2003) (hereafter "Haney, Mental Health Issues in Long-Term Solitary (2003)"); Craig Haney, *Restricting the Use of Solitary Confinement*, 1 ANN. REV. CRIMINOL. 285-310 (2018) (hereafter, "Haney, Restricting Solitary Confinement (2018)"); Craig Haney & Mona Lynch, *Regulating Prisons of the Future: The Psychological Consequences of Solitary and Supermax Confinement*, 23 N. Y. REV. L. & SOC. CHANGE

38. In addition, research findings regarding solitary confinement connect directly to the vast scientific literature on the effects of social isolation, social exclusion, and loneliness in the larger society. A published article of mine summarizing this scientific literature and its implications for our understanding of the nature and extent of the harmful effects of solitary confinement is attached as Appendix D.[18] This larger body of scientific research provides the broad theoretical framework within which the direct studies of the harmful effects of solitary confinement are grounded and can be better understood. However, the direct studies are themselves substantial in number and import.

39. For example, there are a number of accounts written by mental health and correctional staff who have worked in disciplinary segregation and isolation units and reported observing a range of problematic symptoms manifested by the prisoners who were confined in these places.[19] In addition to these firsthand observers, more systematic research has been conducted on solitary confinement.

477-570 (1997) (hereafter "Haney & Lynch, The Psychological Consequences of Solitary (1997)"); and Peter Scharff Smith, *The Effects of Solitary Confinement on Prison Inmates: A Brief History and Review of the Literature*, 34 CRIME & JUSTICE 441-528 (2006). As I noted, there are a few outlier studies that purport to find few if any negative effects. For a detailed discussion of the serious methodological flaws that plague these studies, see Haney, A Systematic Critique (2018), *supra* note 14.

[18] Haney, The Science of Solitary (2020), attached to this expert report as Appendix D.

[19] Discussions of and citations to some of these studies appear in some of the review articles listed in footnotes 15 and 17 above, and footnotes 20 and 24 below. For example, see Haney & Lynch, The Psychological Consequences of Solitary (1997), *supra* note 17, at 512-514.

The authors of one of the early studies summarized their findings by concluding that "[e]xcessive deprivation of liberty, here defined as near complete confinement to the cell, results in deep emotional disturbances."[20]

40. In the mid-1970s, Professor Hans Toch's large-scale psychological study of prisoners "in crisis" in New York State correctional facilities included important observations about the effects of isolation.[21] After he and his colleagues had conducted numerous in-depth interviews of prisoners, Toch concluded that "isolation panic" was a serious problem in solitary confinement. The symptoms

[20] Bruno Cormier & Paul Williams, *Excessive Deprivation of Liberty*, 11 CAN. PSYCHIATRIC ASS'N J., 470-484 (1966), at 484. The very first studies of solitary confinement in the "modern" era of such research arose in the 1960s and early 1970s, less in response to the increased use of the practice and more because of growing academic interest in "sensory deprivation," which was then seen as a key component of solitary confinement. Although these early studies are compromised by their focus on the effects of solitary confinement that was experienced for very short durations and often included persons who had "volunteered" for the experience, aspects of them are instructive. For some of the early studies of solitary confinement, see Paul Gendreau, N. Freedman, G. Wilde, & George Scott, *Changes in EEG Alpha Frequency and Evoked Response Latency During Solitary Confinement*, 79 J. ABNORMAL PSYCHOL. 54-59 (1972), at 57 ("[t]he present experiment confirms that a slowing in EEG frequency occurs during solitary confinement of prisoners… quite similar [to] slowing effects" in sensory deprivation settings; George Scott & Paul Gendreau, *Psychiatric Implications of Sensory Deprivation in a Maximum Security Prison*, 12 CAN. PSYCHIATRIC ASS'N J. 337, 341 (1969) (stating that decreases in EEG over seven days in isolation correlated with apathetic/lethargic behavior and led the authors to speculate that the prisoners' adaptation to "deprivation circumstances" might compromise their ability to adjust to free society); Richard H. Walters, John E. Callagan & Albert F. Newman, *Effect of Solitary Confinement on Prisoners*, 119 AM. J. PSYCHIATRY 771-773 (1963) (reporting that four days in an isolation cell produced a significant increase in anxiety but no mental or "psychomotor" deterioration in a group of volunteer prisoners). Underscoring the brevity of the time typically spent in solitary confinement in those days, one of these early studies kept prisoners in solitary confinement for a period of no more than ten days, noting that this was "the longest time inmates usually remain in solitary." C. E. J. Eccelstone, Paul Gendreau, & Clifford Knox, *Solitary Confinement of Prisoners: An Assessment of Its Effects on Inmates' Personal Constructs and Adrenocortical Activity*, 6 CAN. J. BEHAV. SCI. 178-191 (1974), at 179 (emphasis added). Even so, half of the original eight prisoners who volunteered to be placed in solitary confinement, and who had been screened for their fitness to do so, quit the study by their second day in isolation. *Id.*

[21] Hans Toch, *Men in Crisis: Human Breakdowns in Prisons*, Chicago: Aldine Publishing Co. (1975).

that Toch reported included rage, panic, loss of control and breakdowns, psychological regression, and a build-up of physiological and psychic tension that led to incidents of self-mutilation.[22] Professor Toch noted that although isolation panic could occur under other conditions of confinement it was "most sharply prevalent in segregation." Moreover, it marked the "distinction between imprisonment, which is tolerable, and isolation, which is not."[23]

41. More recent studies identified numerous problematic and potentially dangerous symptoms that prisoners housed in solitary confinement disproportionately suffer. Those symptoms include: appetite and sleep disturbances, anxiety, panic, a sense of impending emotional breakdown, lethargy, hypersensitivity to stimuli, irritability, aggression, rage, loss of control, ruminations, paranoia, perceptual distortions, cognitive dysfunction, hallucinations, depression, self-mutilation, suicidal ideation and behavior, and social withdrawal.[24]

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[22] *Id*. at 54.

[23] *Id*.

[24] See the articles cited in footnotes 15, 17, and 20 *supra* for summaries of the relevant literature. In addition to the numerous studies cited in the articles referenced these notes, there is a significant international literature on the adverse effects of solitary confinement. For example, see Henri Barte, *L'isolement carceral*, 28 PERSPECTIVES PSYCHIATRIQUES 252 (1989). Barte analyzed what he called the "psychopathogenic" effects of solitary confinement in French prisons and concluded that prisoners placed there for extended periods of time could become schizophrenic instead of receptive to social rehabilitation. He argued that the practice was unjustifiable, counterproductive, and "a denial of the bonds that unite humankind." In addition, see Reto Volkart, *Einzelhaft: Eine Literaturubersicht* (Solitary confinement: A literature survey), 42 PSYCHOLOGIE - SCHWEIZERISCHE ZEITSCHRIFT FUR PSYCHOLOGIE UND IHRE ANWENDUNGEN 1-24 (1983) (reviewing the empirical and theoretical literature on the negative effects of solitary confinement); Reto Volkart, Adolf Dittrich, Thomas Rothenfluh, & Paul Werner, *Eine Kontrollierte Untersuchung uber Psychopathologische Effekte der Einzelhaft* (A controlled investigation

42. In addition, there are correlational studies of the relationship between housing type and various kinds of incident reports in prison. They show that self-mutilation and suicide are more prevalent in isolated, punitive housing units such as administrative segregation and security housing where prisoners are subjected to solitary-like conditions of confinement. For example, clinical researchers Ray Patterson and Kerry Hughes attributed higher suicide rates in solitary confinement-type units to the heightened levels of "environmental stress" that are generated by the "isolation, punitive sanctions, [and] severely restricted living conditions" that

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on psychopathological effects of solitary confinement), 42 PSYCHOLOGIE - SCHWEIZERISCHE ZEITSCHRIFT FUR PSYCHOLOGIE UND IHRE ANWENDUNGEN 25-46 (1983) (finding that when prisoners in "normal" conditions of confinement were compared to those in solitary confinement, the latter were found to display considerably more psychopathological symptoms including heightened feelings of anxiety, emotional hypersensitivity, ideas of persecution, and thought disorders); Reto Volkart, et al., *Einzelhaft als Risikofaktor fur Psychiatrische Hospitalisierung* (Solitary confinement as a risk for psychiatric hospitalization), 16 PSYCHIATRIA CLINICA, 365-377 (1983) (finding that prisoners who were hospitalized in a psychiatric clinic included a disproportionate number who had been kept in solitary confinement); Boguslaw Waligora, *Funkcjonowanie Czlowieka W Warunkach Izolacji Wieziennej* (How men function in conditions of penitentiary isolation), SERIA PSYCHOLOGIA I PEDAGOGIKA NR 34, (1974) (concluding that so-called "pejorative isolation" of the sort that occurs in prison strengthens "the asocial features in the criminal's personality thus becoming an essential cause of difficulties and failures in the process of his resocialization"). *See, also* Ida Koch, *Mental and Social Sequelae of Isolation: The Evidence of Deprivation Experiments and of Pretrial Detention in Denmark*, in THE EXPANSION OF EUROPEAN PRISON SYSTEMS, Working Papers in European Criminology No. 7, 119, 124 (Bill Rolston & Mike Tomlinson eds. 1986) (finding evidence of "acute isolation syndrome" among detainees that occurred after only a few days in isolation and included "problems of concentration, restlessness, failure of memory, sleeping problems and impaired sense of time and ability to follow the rhythm of day and night". If the isolated confinement persisted—"a few weeks" or more—there was the possibility that detainees would develop "chronic isolation syndrome," including intensified difficulties with memory and concentration, "inexplicable fatigue," a "distinct emotional lability" that can include "fits of rage," hallucinations, and the "extremely common" belief among isolated prisoners that "they have gone or are going mad." *Id*. at 125. *See also* Michael Bauer, Stefan Priebe, Bettina Haring & Kerstin Adamczak, *Long-Term Mental Sequelae of Political Imprisonment in East Germany*, 181 J. NERVOUS & MENTAL DISEASE 257-262 (1993) (reporting on the serious and persistent psychiatric symptoms suffered by a group of former East German political prisoners who sought mental health treatment upon release and whose adverse conditions of confinement had included punitive isolation).

exist there.[25] These authors reported that "the conditions of deprivation in locked units and higher-security housing were a common stressor shared by many of the prisoners who committed suicide."[26] In addition, signs of deteriorating mental and physical health (beyond self-injury), other-directed violence such as stabbings, attacks on staff, and property destruction, and collective violence are also more prevalent in these units.[27]

43. As one index of the painfulness and damaging potential of extreme forms of solitary confinement, it is used in so-called "brainwashing" and certain

[25] Raymond Patterson & Kerry Hughes, Review of Completed Suicides in the California Department of Corrections and Rehabilitation, 1999-2004, 59 PSYCHIATRIC SERVS. 676-682 (2008), at 678.

[26] *Id. See also* Lindsay M. Hayes, *National Study of Jail Suicides: Seven Years Later*, Special Issue: Jail Suicide: A Comprehensive Approach to a Continuing National Problem, 60 PSYCHIATRIC Q., 7 (1989); Alison Liebling, *Vulnerability and Prison Suicide*, 36 BRIT. J. CRIMINOL. 173-187 (1995); Alison Liebling, *Prison Suicide and Prisoner Coping*, 26 CRIME & JUST. 283-359 (1999); and Paolo Roma, Maurizio Pompili, David Lester, Paolo Giradi, & Stefano Ferracito. *Incremental Conditions of Isolation as a Predictor of Suicide in Prisoners*, FORENSIC SCI. INT'L 233 (2013), at e1-e2. Prisoners appear to be at greatest risk of suicide early in their stay in solitary confinement, but they remain at risk throughout. *See* Bruce Way, Donald Sawyer, Sharen Barboza, & Robin Nash, *Inmate Suicide and Time Spent in Special Disciplinary Housing in New York State Prison*, 58 PSYCHIATRIC SERVS. 558-560 (2007). Homer Venters and his colleagues have found similar increased risk of self-harm among isolated jail inmates. *See* Fatos Kaba, Anrea Lewis, Sarah Glowa-Kollisch, James Hadler, et al., *Solitary Confinement and Risk of Self-Harm among Jail Inmates*. 104 AM. J. PUB. HEALTH 442-447 (2014).

[27] *See, e.g.*, Howard Bidna, Effects of Increased Security on Prison Violence, 3 J. CRIM. JUST. 33-46 (1975); K. Anthony Edwards, Some Characteristics of Prisoners Transferred from Prison to a State Mental Hospital, BEHAV. SCI. & L. 131-137 (1988); Elmer H. Johnson, *Felon Self-Mutilation: Correlate of Stress in Prison*, in Jail House Blues (Bruce L. Danto ed., Epic Publications 1973); Anne Jones, *Self-Mutilation in Prison: A Comparison of Mutilators and Nonmutilators*, 13 CRIM. JUST. & BEHAV. 286-296 (1986); Peter Kratcoski, *The Implications of Research Explaining Prison Violence and Disruption*, 52 FED. PROBATION, 27-32 (1988); Ernest Otto Moore, *A Prison Environment: Its Effect on Health Care Utilization, Dissertation Abstracts*, Ann Arbor, Michigan (1980); Frank Porporino, *Managing Violent Individuals in Correctional Settings*, 1 J. INTERPERSONAL VIOLENCE 213-237 (1986); and Pamela Steinke, *Using Situational Factors to Predict Types of Prison Violence*, 17 J. OFFENDER REHABILITATION 119-132 (1991).

forms of torture. In fact, many of the negative effects of solitary confinement are analogous to the acute reactions suffered by torture and trauma victims, including post-traumatic stress disorder ("PTSD") and the kind of psychiatric sequelae that plague victims of what are called "deprivation and constraint" torture techniques.[28]

44. Although not every isolated prisoner will experience all or even most of the negative psychological symptoms associated with solitary confinement, the prevalence of these symptoms (that is, the extent to which prisoners who are placed in these units suffer from these and related symptoms) is often very high. For example, in an early study that I conducted of a representative sample of one hundred prisoners who were housed in the Security Housing Unit at Pelican Bay Prison in California,[29] I found that every symptom of psychological distress that I measured but one (fainting spells) was suffered by more than half of the prisoners

[28] Solitary confinement is among the most frequently used psychological torture techniques. In D. Foster, Detention & Torture in South Africa: Psychological, Legal & Historical Studies (Cape Town: David Philip (1987)), psychologist Foster listed solitary confinement among the most common "psychological procedures" used to torture South African detainees (at 69) and concluded that "[g]iven the full context of dependency, helplessness and social isolation common to conditions of South African security law detention, there can be little doubt that solitary confinement under these circumstances should in itself be regarded as a form of torture" (at 136). *See also* Matthew Lippman, *The Development and Drafting of the United Nations Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment*, 27 B.C. INT'L & COMP. L. REV. 275 (1994); Tim Shallice, *Solitary Confinement—A Torture Revived?* NEW SCIENTIST, Nov. 28, 1974; F.E. Somnier & I.K. Genefke, *Psychotherapy for Victims of Torture*, 149 BRIT. J. PSYCHIATRY 323-329 (1986); and Shaun R. Whittaker, *Counseling Torture Victims*, 16 THE COUNSELING PSYCHOLOGIST 272-278 (1988).

[29] To ensure the representativeness of the sample, all of the interviewees were randomly selected from the prison roster.

who were interviewed.[30] Many of the symptoms were reported by two-thirds or more of the prisoners assessed in this isolation housing unit, and some were suffered by nearly everyone. Well over half of the Pelican Bay isolated prisoners in this study reported a constellation of symptoms—headaches, trembling, sweaty palms, and heart palpitations—that is commonly associated with hypertension.

45. With respect to a separate set of symptoms—those that have been identified in the literature as direct psychopathological effects of isolation—I also found that almost all of the prisoners whom I evaluated reported ruminations or intrusive thoughts, an oversensitivity to external stimuli, irrational anger and irritability, difficulties with attention and often with memory, and a tendency to socially withdraw. Almost as many prisoners reported a constellation of symptoms indicative of mood or emotional disorders—concerns over emotional flatness or losing the ability to feel, swings in emotional responding, and feelings of depression or sadness that did not go away. Finally, sizable minorities of the prisoners reported symptoms that are typically only associated with more extreme forms of psychopathology—hallucinations, perceptual distortions, and thoughts of suicide.

[30] See discussions of these data in Haney, Mental Health Issues in Long-Term Solitary (2003), *supra* note 17, and more recent data collected at the same facility, showing much the same pattern of results, Haney, Restricting Solitary Confinement (2018), cited *supra* in note 17.

46. In addition to these specific symptoms of psychological stress and the psychopathological reactions to isolation that have been well-documented by myself and others, the extreme and long-term deprivation of social contact destabilizes a person's sense of self, undermines their social identity, and ultimately can destroy their ability to function normally in free society.

47. The experience of social isolation is psychologically harmful and potentially destabilizing in part because it deprives people of the opportunity to affiliate with others. The importance of "affiliation"—the opportunity to have meaningful contact with others—in reducing anxiety in the face of uncertain or fear-arousing stimuli is long-established in social psychological literature.[31] In addition, one of the ways that people determine the appropriateness of their feelings—indeed, how we establish the very nature and tenor of our emotions—is through contact with others.[32]

48. Solitary confinement is a socially pathological environment that forces long-term inhabitants to develop their own socially pathological

[31] See, e.g., Stanley Schachter, The Psychology of Affiliation: Experimental Studies of the Sources of Gregariousness (1959); Irving Sarnoff & Philip Zimbardo, Anxiety, Fear, and Social Affiliation, 62 J. ABNORMAL SOC. PSYCHOL. 356-363 (1961); Philip Zimbardo & Robert Formica, Emotional Comparison and Self-Esteem as Determinants of Affiliation, 31 J. PERSONALITY 141-162 (1963).

[32] *See, e.g.*, A. Fischer, A. Manstead, & R. Zaalberg, *Social Influences on the Emotion Process*, in 14 EUR. REV. SOC. PSYCHOL. 171-202 (2004); C. Saarni, *The Development of Emotional Competence*, (1999); Stanley Schachter & Jerome Singer, *Cognitive, Social, and Physiological Determinants of Emotional State*, 69 PSYCHOL. REV. 379-399 (1962); L. Tiedens & C. Leach (Eds.), *The Social Life of Emotions* (2004); and S. Truax, *Determinants of Emotion Attributions: A Unifying View*, 8 MOTIVATION AND EMOTION 33-54 (1984).

adaptations—ones premised on the absence of meaningful contact with people—in order to function and survive. Prisoners have reported to me that, as a result, they feel that they are gradually changing their patterns of thinking, acting and feeling to cope with their largely asocial world and the impossibility of relying on social support or the routine feedback that comes from normal contact with others. These adaptations thus represent "social pathologies" brought about by the socially pathological environment of isolation. Moreover, the patterns can become internalized so deeply that they persist long after time in isolation has ended.

49. For example, in order to cope with the asociality of their daily existence, some prisoners move from initially being starved for social contact to eventually being disoriented and even frightened by it. As they become increasingly unfamiliar and uncomfortable with social interaction, they are further alienated from others and made anxious in their presence. This helps explain the seeming paradox wherein some isolated prisoners socially withdraw even further from the world around them, receding even more deeply into themselves than the sheer physical isolation of solitary confinement and its attendant procedures require.

50. Although social deprivation is at the core of solitary confinement, and what seemingly accounts for its most intense psychological pain and the greatest risk of harm, prison isolation units inflict additional deprivations on prisoners that

negatively impact their health in significant ways. The characteristically high levels of repressive control, enforced idleness, reduced positive environmental stimulation, and physical and material deprivations also lead to psychological distress and can create even more lasting negative consequences. Indeed, most of the things that we know are beneficial to prisoners—such as increased participation in institutional programming, visits with persons from outside the prison, physical exercise, and so on[33]—are either functionally denied or greatly restricted in solitary confinement units.

51. People also require a certain level of mental and physical activity in order to remain healthy. The extremely limited opportunities for movement and exercise in most solitary confinement units unquestionably impacts prisoners' mental as well as physical health. Simply put, without sufficient access to normal physical activity, prisoners are also placed at risk of harm.

52. Apart from the profound social, psychological, and physical deprivations that solitary confinement imposes, isolated prisoners experience extended periods of monotony and idleness. Many of them experience a form of sensory deprivation—there is an unvarying sameness to the physical stimuli that surround them, they exist within the same limited spaces and are subjected to the

[33] John Wooldredge, *Inmate Experiences and Psychological Well-Being*, 16 CRIM. JUST. & BEHAV. 235-250 (1999).

same repetitive routines, and there is little or no external variation to the experiences they are permitted to have or can create for themselves. This loss of perceptual and cognitive or mental stimulation may result in the atrophy of important related skills and capacities.[34]

53. Scientific research also indicates that the adverse effects of isolated confinement can persist long after such confinement ends,[35] including even after a person has been released from incarceration. For example, solitary confinement survivors suffer post-incarceration adjustment problems at higher rates than the already high rates experienced by formerly incarcerated persons in general, including being more likely to manifest symptoms of PTSD.[36]

2) A Summary of the Extensive Recent Research Establishing the Harmfulness of Solitary Confinement

[34] See the articles cited in the reviews referenced in footnote 20 *supra*. In addition, see Stanley Brodsky & Forrest Scogin, *Inmates in Protective Custody: First Data on Emotional Effects*, 1 FORENSIC REP. 267-289 (1988).

[35] For example, a group of Stanford researchers found that behavioral patterns and psychological reactions developed in the course of adapting to solitary confinement were persistent and problematic when formerly long-term isolated prisoners attempted to transition back to mainline prison housing. *See* Human Rights in Trauma Mental Health Lab, Stanford University, *Mental Health Consequences Following Release from Long-Term Solitary Confinement in California* (2017), available at https://ccrjustice.org/sites/default/files/attach/2018/04/CCR_StanfordLab-SHUReport.pdf [https://perma.cc/5WGK-UBBN]. Psychiatrist Terry Kupers, who has written extensively about the mental health risks of solitary confinement, has termed the lingering effects of the experience "SHU postrelease syndrome." *See* Terry Kupers, *Solitary: The Inside Story of Supermax Isolation and What We Can Do to Abolish It*, (2017), especially at 151-167.

[36] *See, e.g.*, Brian Hagan, et al., *History of Solitary Confinement Is Associated with Post-Traumatic Stress Disorder Symptoms among Individuals Recently Released from Prison*, 95 J. URB. HEALTH 141-148 (2018); and Arthur Ryan & Jordan DeVylder, *Previously Incarcerated Individuals with Psychotic Symptoms Are More Likely to Report a History of Solitary Confinement*, 290 PSYCHIATRY RES. 113064 (2020). Both articles are briefly discussed in the next section of this report.

54. In addition to the long-standing historical record on the harmfulness of solitary confinement and the extensive research summarized in numerous literature reviews published over the last several decades, much of which I discussed in the above paragraphs, contemporary researchers have continued to study solitary confinement and amass data on its negative effects. Indeed, numerous articles published in just the last several years have continued to underscore and buttress the scientific consensus about risk of harm that solitary confinement entails. These publications underscore the fact that this consensus is not only widespread but continues to be corroborated and extended in current research and analyses.

55. For example, in 2018, Alicia Piper and David Berle reviewed research that examined the relationship between forms of trauma experienced during incarceration and post-traumatic stress disorder ("PTSD") symptoms, and identified the significant empirical association between PTSD and the experience of having been in solitary confinement.[37] They concluded that this particular outcome "supports earlier research, suggesting that solitary confinement represents an environment of physical and psychological deprivation, and may also represent

[37] Alicia Piper & David Berle, The Association between Trauma Experienced during Incarceration and PTSD Outcomes: A Systematic Review and Meta-Analysis, 30 J. FORENSIC PSYCHIATRY & PSYCHOL. 854-875 (2018), at 866.

a barrier to treatment and other opportunities of growth."[38] As the authors summarized: "[T]hese results highlight the detrimental effects of solitary confinement on the psychological well-being of incarcerated individuals."[39]

56. Also in 2018, Carly Chadick and her colleagues reported on a study conducted in a Kansas prison, comparing prisoners who had spent on average nearly two years in solitary confinement with a matched sample of general population prisoners.[40] Despite using a convenience measure that had been administered to all prisoners entering the Kansas Department of Corrections that was not intended as, nor necessarily a very sensitive measure of, psychological distress, Chadick et al. nonetheless found that the prisoners in solitary confinement not only showed "notable" increases in scores for anxiety and PTSD after spending time in solitary but also that they "endorsed greater post-assessment levels of anxiety, depressed mood, post-traumatic stress, and somatoform complaints compared to non-segregated inmates."[41] In fact, the solitary confinement prisoners

[38] *Id.* at 868.

[39] *Id.*

[40] Carly Chadick, Ashley Batastini, Samuel Levulis, & Robert Morgan, The Psychological Impact of Solitary: A Longitudinal Comparison of General Population and Long-Term Administratively Segregated Male Inmates, 23 LEGAL & CRIMINOL. PSYCHOL. 101-116 (2018).

[41] *Id.* at 110. The fact that "neither the segregated nor non-segregated inmates endorsed symptoms that were in the clinically significant range" despite the fact that 62.9% of both groups had a formal mental health diagnosis may underscore the insensitivity of the measure. *Id.* at 104, 110.

had elevated pre- and post-scores on literally 9 of the 10 scales that were administered and that the authors reported on.[42] Chadick et al. concluded their article with a series of recommendations about prison "best practices" with respect to solitary confinement, citing an article that I co-authored.[43] If conscientiously implemented, their recommendations—including prohibiting the isolation of mentally ill prisoners except in "extreme instances" of "imminent danger," instituting "therapeutic stepdown" programs for prisoners who have served more than 60 days in solitary confinement, providing for enhanced mental health monitoring and the removal of prisoners who display symptoms of decompensation, involving mental health personnel in determining disciplinary sanctions, and creating clear behavioral markers to enable prisoners to obtain their release from solitary—would likely result in very significant reductions in the use of solitary confinement overall and help to ameliorate at least some of its well-known psychological harms.

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[42] *Id. at* 108, Table 2 (comparing Administrative Segregation prisoners for Pre- and Post- scores). It is interesting to note that, in the original sole authored report from which the later co-authored publication's data were taken, Carly Chadick wrote that "[p]articipants in segregation scored higher on the anxiety, major depression, and delusional disorder scales than those who never spent time in segregation, coinciding with previous research," and ended by encouraging mental health workers to "help prevent psychological deterioration from occurring" in solitary confinement. *See* Carly Chadick, *Psychological Symptoms of Administrative Long-Term Segregation: A Pre- and Post-Segregation Analysis at a Kansas Correctional Facility*, Master's Thesis, Emporia State University (2009) at 26, 30-31.

[43] Cyrus Ahalt, Craig Haney, Sarah Rios, Matthew Fox, David Farabee, & Brie Williams, *Reducing the Use and Impact of Solitary Confinement in Corrections,* 13 INT'L J. PRISONER HEALTH 41-48 (2018).

57. A literature review by Hunter Astor, Thomas Fagan, and David Shapiro focused on published studies they described as "peer-reviewed, empirical studies supported by quantitative data" (although curiously omitting my own 2003 study, despite it meeting those criteria).[44] They concluded that the task of comparing studies was compromised by variations in solitary confinement practices and a lack of standardization in research protocols and that, overall, the results were "mixed," including that "[n]umerous cross sectional studies report a relatively high prevalence of psychological symptoms/psychopathology… and suicide attempts/hospitalizations," as did "studies using at least one comparison sample" (but noting that both kinds of studies were limited by the possible influence of pre-existing conditions),[45] and that longitudinal studies suggested "positive, neutral, or adverse effects of restrictive housing on psychological functioning" (findings that could also be limited by, among other things, "high rates of attrition" which, they correctly noted, was "relatively common for studies conducted in correctional settings").[46]

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[44] Hunter Astor, Thomas Fagan, & David Shapiro, *The Effects of Restrictive Housing on the Psychological Functioning of Inmates*, 24 J. CORRECTIONAL HEALTH CARE 8-20 (2018).

[45] *Id.* at 9-10.

[46] *Id.* at 16. It is worth noting that Astor et al. did not take into account the numerous additional publications that became available in 2018, after their literature review was written, and that all corroborated the already substantial evidence of harmfulness. As I will note later, it is entirely reasonable to assume that, in light of this additional scientific evidence, none of which was "mixed," Astor et al. might well have reached a different judgment.

58. In the next year, 2019, Keramit Reiter and her colleagues published the results of their research on the effects of long-term solitary confinement in several different Washington State prisons. Focusing on a sample of more than one hundred prisoners, who were housed on average for 14.5 months in several different Washington State prisons,[47] they used a psychiatric rating scale, qualitative interviews, and medical file reviews to assess distress and harm. The researchers reported that "clinically significant" psychiatric ratings were found in "as much as a quarter of the population sampled, especially for the depression and anxiety symptoms," and that there was "additional evidence of clinically significant psychiatric distress in as much as half of the population sampled."[48] Moreover, the interview data collected from the prisoners housed in solitary confinement provided additional self-reported evidence of the "emotional toll" of being in solitary confinement and the feelings of social isolation that it engendered.[49] Not only were "[s]ymptoms such as anxiety and depression […]

[47] Keramit Reiter, Joseph Ventura, David Lovell, Dallas Augustine, et al., *Psychological Distress in Solitary Confinement: Symptoms, Severity, and Prevalence in the United States, 2017-2018*, 110 AM. J. PUB. HEALTH S56-S62 (2019).

[48] *Id.* at S58. These researchers also observed that, although the Brief Psychiatric Rating Scale they employed is widely used to identify psychiatric symptoms, it "does not capture the full spectrum of psychiatric distress incarcerated people experience in solitary confinement," so that, "[i]f we study people in solitary confinement solely with instruments validated with non-incarcerated populations… we may fail to capture the extent of incarcerated people's psychological distress." *Id.* at S60-61.

[49] *Id.* at S59.

especially prevalent" among the isolated prisoners but so, too, were "symptoms ostensibly specific to solitary confinement, such as sensory oversensitivity and a perceived loss of identity…"[50] The authors concluded that the association of solitary confinement with psychopathology calls into question the usefulness of the practice, "let alone its justice."[51]

59. Also in 2019, Michael Campagna and his colleagues conducted a study with a sample of over 400 prisoners from a prison system in the Western United States.[52] Although—at least compared to some studies—the amount of time prisoners spent in solitary confinement was relatively modest (averaging 21.15 days), even when researchers controlled for a host of other variables, the number of days a person spent in solitary confinement "was negatively and significantly associated with mental health status."[53] Time spent in solitary confinement not

[50] *Id.* at S60.

[51] *Id.* at S61.

[52] Michael Campagna, et al., *Understanding Offender Needs Over Forms of Isolation Using a Repeated Measures Design*, 99 PRISON J. 639-661 (2019).

[53] *Id.* at 649 (emphasis added). They found that other background variables also were negatively associated with mental health. However, even after those variables were controlled for, days spent in solitary confinement had an adverse effect on mental health. Campagna et al. acknowledged that although "the results support the hypothesis that [solitary confinement] has a negative effect on offenders' mental health," *id.* at 650, and the measured negative effects on mental health were significant (such that each day in solitary confinement decreased the odds of a positive mental health score by 1.7%), the adverse effects were not as drastic or deleterious as those reported in some other research. This is not surprising, given the fact that the conditions of confinement in other studies were often identified as very severe (for example, "supermax"-type conditions, as opposed to the unspecified conditions of solitary confinement in Campagna et al.'s study), and the amounts of time spent in solitary confinement in those other studies were measured in months or years, rather than weeks or days, as in the study Campagna and colleagues conducted. *Id.* at 649, 652.

only negatively affected mental health status, as indicated by scores on a mental health needs assessment, but had other deleterious effects as well. Thus, the researchers also found that time spent in solitary confinement had presumably unintended negative consequences—it significantly negatively affected the prisoners' behavior toward authority figures—and failed to achieve several apparent goals (i.e., it did not have any positive effect on impulse control or on a measure of what the researchers termed the prisoners' "readiness to change").[54] In light of their findings, the authors joined prior recommendations that prison administrators should "[i]nevitably" develop alternative approaches to managing prisoner behavior "that minimize the use of isolation" and should prohibit it outright for prisoners with mental health problems "except in the case of extreme circumstances related to safety […]"[55]

60. Another study, published in 2019, examined a different issue—the association of self-reported time spent in solitary confinement with mental illness diagnoses, in this instance among juveniles waived into the adult criminal justice system.[56] Based on a sample of 92 juveniles who had spent time in adult criminal

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[54] *Id.* at 650-651.

[55] *Id.* at 652.

[56] Colby Valentine, Emily Restivo, & Kathy Wright, *Prolonged Isolation as a Predictor of Mental Health for Waived Juveniles*, 58 J. OFFENDER REHABILITATION 352-369 (2019).

justice facilities in New Jersey, Colby Valentine and her colleagues reported that those "who spend more time in segregation have a greater number of mental health diagnoses."[57] Even when a host of other variables (e.g., demographics, waived offense, medication use, physical and sexual abuse while incarcerated) were taken into account, the researchers found that "the number of mental illness diagnoses for waived youth increases by approximately 26% with every one-unit increase in time in segregation."[58] They concluded that, given the "limited social contact with other human beings," and the "limited and inadequate access to medical and mental health treatment as well as to rehabilitative and educational programming" that often characterizes solitary confinement units, "it is not surprising that segregation may be psychologically damaging, especially for juveniles."[59]

61. My own research, published in a journal article in 2018 and a 2020 book chapter, reported on the results of a study that used a different methodology, contrasting the psychological state of a group of extremely long-term solitary confinement prisoners with a comparable sample of prisoners currently housed in general population.[60] The prisoners in both groups were randomly selected to

[57] *Id*. at 360.

[58] *Id.* at 362.

[59] *Id.* at 363.

[60] *See* Haney, Restricting Solitary Confinement (2018), *supra* note 17, and Craig Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, in Solitary Confinement: Effects, Practices, and Pathways to Reform (Jules Lobel and Peter Scharff Smith, eds., 2020), at 129-152. The solitary

ensure representativeness (but did not include anyone on the prison's mental health caseload).[61] I found that those prisoners who were subjected to extremely long-term, continuous solitary confinement reported nearly twice the number of symptoms of stress-related trauma and twice the number of isolation-related pathology overall, as compared to the prisoners in prison for comparable amounts of time but who were currently housed in general population. In addition, the isolated prisoners reported more than twice the mean intensity levels for both categories of problematic symptoms than the long-term general population prisoners.[62] The same study also found that, compared to long-term prisoners in general population, the long-term isolated prisoners were significantly more "lonely," as measured by a standard and widely used loneliness scale. In fact, they reported levels of extreme loneliness rarely found anywhere in the literature.[63]

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confinement prisoners had spent 10 continuous years or more housed in the Security Housing Unit at Pelican Bay State Prison; the general population prisoners had been incarcerated for at least 10 continuous years and were now housed in the mainline unit at the same prison.

[61] In *Madrid v. Gomez*, 889 F. Supp. 1146 (N.D. Cal. 1995), the Court prohibited the housing of mentally ill prisoners in the Pelican Bay solitary confinement unit. To ensure the comparability of the samples in this regard, no general population prisoner who was on the prison system's mental health caseload was included in the study.

[62] A sequential multiple linear regression was used to determine whether solitary status explained the difference in the intensity of these isolation-related pathological symptoms. In fact, being in solitary confinement was by far the largest contributor to the intensity of isolation-related symptoms suffered, even after controlling for age, marital status, and estimated total time in prison.

[63] *See* Dan Russell, Letitia Peplau, & Carolyn Cutrona, *The Revised UCLA Loneliness Scale: Concurrent and Discriminant Validity Evidence*, 39 J. PERSONALITY & SOC. PSYCHOL. 472-480 (1980).

62. To my knowledge, virtually every study of the topic has found that suicide and rates of self-harm are significantly higher in solitary confinement than in other prison settings.[64] Several publications that have appeared recently underscore the heightened risk of self-harm and suicidality that solitary confinement incurs. For example, in 2018 Robert Canning and Joel Dvoskin acknowledged that suicide was related to placement in solitary confinement and that even prisoners who were placed there for their own protection may experience "anxiety and agitation" that "can rise to psychotic proportions and quickly precipitate a suicidal crisis."[65] More recently, in 2021, Louis Favril and his colleagues conducted a comprehensive review of studies done across some 20 countries and concluded that placement in solitary confinement was a significant environmental risk factor for self-harm.[66]

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[64] For example, see Meredith Dye, *Deprivation, Importation, and Prison Suicide: Combined Effects of Institutional Conditions and Inmate Composition*, 38 J. CRIM. JUST. 796-806 (2010); Seena Fazel, Julia Cartwright, Arabella Norman-Nott, & Keith Hawton, *Suicide in Prisoners: A Systematic Review of Prisoners*, 69 J. CLINICAL PSYCHIATRY, 1721-1731 (2008); Stefan Fruehwald, Teresa Matschnig, Franz Koenig, Peter Bauer, & Patrick Frottier, *Suicide in Custody: Case-Control Study*, 185 BRIT. J. PSYCHIATRY 494-498 (2004); and Fatos Kaba, Andrea Lewis, Sarah Glowa-Kollisch, James Hadler, et al., *Solitary Confinement and Risk of Self-Harm Among Jail Inmates*, 104 AM. J. PUB. HEALTH 442-447 (2014).

[65] Robert Canning & Joel Dvoskin, *Preventing Suicide in Detention and Correctional Facilities*, in Oxford Handbook of Prisons and Imprisonment (J. Wooldredge & P. Smith eds., Oxford University Press 2018), at 551-578, 555.

[66] Louis Favril, Rongqin Yu, Keith Hawton, & Seena Fazel, *Risk Factors for Self-Harm in Prison: A Systematic Review and Meta-Analysis*, 7 LANCET: PSYCHIATRY 682-691 (2021). *See also* Louis Favril, Ciska Wittouck, Kurt Audenaert, & Freya Vander Laenen, *17 year National Study of Suicides in Belgium* 40 CRISIS 42-53 (2018), who found much the same thing.

63. A number of studies done in the past few years also focused on the negative physical or medical effects of solitary confinement. For example, in a 2019 study, Lauren Brinkley-Rubinstein and her colleagues showed that the stressfulness and long-term damage that is inflicted by solitary confinement can adversely affect someone's life expectancy. Specifically, they analyzed the experiences of more than 200,000 people who were released from a state prison system between 2000 and 2015 and found that those persons who spent any time in solitary-type confinement (such as administrative or disciplinary segregation) "were 24% more likely to die in the first year after release."[67] Prisoners who spent time in solitary-type confinement also were more likely to commit suicide (78% more likely than other inmates) and to be victims of homicide (54% more likely) after being released from prison,[68] and they were "127% more likely to die of an opioid overdose in the first 2 weeks after release."[69]

64. In addition to Brinkley-Rubenstein et al.'s research on the relationship of solitary confinement to mortality or life expectancy, three other publications recently also addressed the medical risks of solitary confinement. In the first, law

[67] Lauren Brinkley-Rubinstein et al., *Association of Restrictive Housing During Incarceration with Mortality After Release*, J. AM. MED. (October 4, 2019), available at https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2752350.

[68] *Id.*

[69] *Id.*

professor Jules Lobel and neuroscientist Huda Akil reported on the well-documented neurological changes that take place in brain structure and function in response to social isolation and extrapolated them to the adverse effects of solitary confinement.[70] Summarizing the work and quoting the opinions of several prominent neuroscientists, including Akil herself as well as Matthew Lieberman, Naomi Eisenberger, and Michael Zigmond, they noted "it is considered settled science within the field of psychology that humans and all mammals have a fundamental need for social connection," that the social pain of isolation involves "the same neural and neurochemical process invoked during physical pain," and that social isolation affects "neural activity in certain cortical regions of the brain associated with physical distress, in the same way physical pain would."[71] In addition, "neuroscience studies suggest that solitary confinement can 'fundamentally alter the structure of the human brain in profound and permanent ways,'" that "the key features of solitary confinement [are] 'sufficient to change the brain […] dramatically depending on whether it lasts briefly or is extended,'"[72] and that the brains of isolated animals demonstrate impaired functioning and

[70] Jules Lobel & Huda Akil, *Law & Neuroscience: The Case of Solitary Confinement*, 147 DAEDALUS 61-75 (2018).

[71] *Id.* at 69 (quoting neuroscientist Matthew Lieberman).

[72] *Id.* at 69-70 (quoting neuroscientist Huda Akil).

structural dimensions, including having fewer nerve cells, smaller neurons, and poorer neurotransmission.[73] Lobel and Akil concluded by suggesting that this evidence indicates that "neuroscience can play an important role in the legal struggle against prolonged solitary confinement.[74] Lobel and Akil also wisely noted something that I stated earlier about the practical and other obstacles that preclude conducting a "perfect" study of the effects of solitary confinement: "Not only would the cost of doing such a study be massive and untenable for a public interest lawsuit, but even if the necessary funds could be raised, prison officials do not allow scientists into the prison to do studies, and, absent an unlikely court order, the plan would not be workable."[75]

65. In another paper on the negative physical/medical effects of solitary confinement, this one published in 2019, medical school professor Brie Williams and her colleagues used data on the differential rates of hypertension between general population and solitary confinement prisoners to estimate the toll of solitary confinement on the loss of what they termed "quality-adjusted life years" and the increased medical costs of treating additional isolation-related cases of

[73] *Id.* at 70 (summarizing the work of neuroscientist Michael Zigmond).

[74] *Id.* at 71.

[75] *Id.* at 68.

hypertension.[76] Noting that "a wealth of research describes the impact of isolation on stress hormone dysfunction and adverse cardiovascular outcomes including hypertension and mortality,"[77] Williams et al. estimated an approximately 31% increase in the prevalence of hypertension brought about by being subjected to solitary confinement which, by their calculations, would conservatively result in a loss of 5673 quality-of-life years and $155 million in additional future healthcare costs. As they concluded, "[t]hese findings, coupled with the growing consensus that solitary confinement is counter-productive as a public safety measure, suggest an urgent need to dramatically reduce solitary confinement using alternative strategies that achieve safety without compromising health."[78]

66. The final paper published during this time frame that addressed the medical risks of solitary confinement appeared in 2020 and examined the "physical health impacts" of solitary confinement.[79] Using surveys and interviews with an overall sample of several hundred prisoners, reviews of their medical and mental

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[76] Brie Williams, Amanda Li, Cyrus Ahalt, Pamela Coxson, James Kahn, & Kirsten Bibbins-Domingo, *The Cardiovascular Health Burdens of Solitary Confinement*, 34 J. GEN. INTERNAL MED. 1977-1980 (2019).

[77] *Id.* at 1977.

[78] *Id.* at 1979-1980.

[79] Justin Strong, Keramit Reiter, Gabriela Gonzalez, Rebecca Tublitz, Dallas Augustine, et al., *The Body in Isolation: The Physical Health Impacts of Incarceration in Solitary Confinement*, 15 PLoS ONE 1-20 (2020) at e0238510.

health files, and institutional data, Justin Strong and his colleagues found that one in seven prisoners housed in solitary confinement reported "clinically significant" concerns over their bodily health, and that the concerns tended to persist if the persons remained in solitary confinement. The health concerns included "a range of physical ailments directly connected to the conditions of their confinement" (including "various deprivations of movement, provisions… and human contact"),[80] and solitary confinement policies and practices "exacerbated [the prisoners'] physical ailments, especially their chronic health problems."[81] The authors also noted that the widespread complaints that prisoners voiced about "musculoskeletal pain" included the fact that it was often "untreated" and yet serious enough to interfere "(physically and mentally) with even those few, limited activities available to them in solitary confinement."[82] Strong et al. noted that because persons in solitary confinement "are left with very few options to effectively manage persistent pain" it appears "to foster more maladaptive behavior, such as ruminations, stress, and despair."[83] They concluded that, although they could not definitively establish the prevalence of symptoms and

[80] *Id.* at 8.

[81] *Id.* at 10.

[82] *Id.* at 12.

[83] *Id.*

mechanisms of suffering in the units under study, "evidence is clear that solitary confinement poses serious health risks," and that "[p]hysical suffering reveals itself to be a crucial dimension of experience in solitary confinement."[84]

67. In Ellie Brown's 2020 "systematic review" of the solitary confinement literature she synthesized past quantitative "meta-analytic" reviews with narrative accounts of a broader range of empirical studies, as well as separately examining the results of sixteen studies focusing on psychological effects.[85] Brown concluded that a majority of the individual studies "revealed a negative effect of segregation" and that the symptomatology identified in those studies "was broad ranging," including higher levels of psychological distress, psychiatric morbidity, self-harm and, in one instance, a significant association between the experience of solitary confinement and post-traumatic stress disorder.[86] She also acknowledged that, among the results of studies that lacked control groups, "[i]mportantly, negative psychological responses such as hallucinations, hyper-responsivity to stimuli, perceptual distortions, anxiety and psychotic disturbances were common" as were elevated "prevalence and

[84] *Id.* at 15.

[85] Ellie Brown, *A Systematic Review of the Effects of Prison Segregation*, 52 AGGRESSION & VIOLENT BEHAV. 101389 (2020).

[86] *Id.* at 10.

disproportionality of events such as suicide and self- harm," and that these findings were corroborated by "a substantial number of other studies, which adopt different methodological designs…"[87]

68. Similarly, a meta-analysis performed by Mimosa Luigi and her colleagues that was published in 2020, and encompassed 13 separate studies comprising a total sample of 382,440 prisoners overall, concluded that "solitary is associated with the psychological deterioration of inmates."[88] Although the association between solitary confinement and increased mental health symptomatology was moderate overall, "[h]igher quality studies from the systematic review also showed [solitary confinement] was related to deleterious effects with regards to mood symptoms, PTSD-related outcomes, psychotic experiences, hostility, self-injurious behavior, and mortality.[89] The researchers also observed that the fact that mental health staff typically have only "obstructed access to inmates" in solitary confinement, and rely heavily on the administration of psychotropic medications and "short and infrequent cell-front visits" for

[87] *Id.* at 12.

[88] Mimosa Luigi, Laura Dellazizzo, Charles-Edouard Giguere, Marie-Helene Goulet, & Alexandre Dumais, Shedding Light on "the Hole": A Systematic Review and Meta-Analysis on Adverse Psychological Effects and Mortality in Correctional Settings, 11 FRONTIERS IN PSYCHIATRY 840 1-1 (2020).

[89] *Id.* at 6. Unlike some other meta-analytic reviews, Luigi et al. were careful not to overweight the results of the methodologically flawed "Colorado Study." *See* Haney, A Systematic Critique (2018), *supra* note 14, for a discussion of the pitfalls of overweighting the results of the Colorado Study.

treatment, tends to "make monitoring of psychological deterioration difficult and possibly under detected."[90] Moreover, Luigi et al. found that "the association between psychological deterioration and [solitary confinement] exposure grew even stronger when removing a sample entirely composed of inmates with prior mental illnesses," indicating that prisoners "with prior mental illness are not driving the entirety of the association between [solitary confinement] and psychological distress."[91]

69. Also in 2020, the Northwestern Law Review published a literature review that pertained in a different but related way to these issues—my own review of the vast amount of scientific evidence that has established the negative psychological and physical effects of social isolation, social exclusion, and loneliness, its applicability to solitary confinement, and the way in which this broad literature expands the narrative about harmfulness of the practice. As I said, "knowledge about solitary confinement does not exist in an empirical or theoretical vacuum," but is instead an extension of "a wealth of scientific knowledge about the adverse consequences [of social isolation, loneliness, and social exclusion] as they

[90] Luigi et al., *supra* note 88, at 8.

[91] *Id.* They wisely raised another issue that may result in underestimates of the full magnitude of the psychological distress experienced in solitary confinement, namely that "cross-sectional or retrospective designs, such as those used in most studies included, do not account for the loss of inmates so adversely affected by [solitary confinement] that they necessitate transfer out of this housing." *Id.* at 9.

occur in context and settings outside prison."[92] Indeed, this research has underscored the "destructive and even life-threatening consequences of isolation."[93] If anything, because of how completely, forcefully, and pejoratively it is employed there, "adverse effects of isolation in a *correctional* setting are likely to be far greater."[94]

70. In addition to the empirical studies of the direct negative effects of solitary confinement, and the literature reviews depicting various aspects of its harmfulness, several other studies published in recent years reported on associations between the experience of solitary confinement and post-imprisonment negative psychological and other problematic events. For example, Brian Hagan and his colleagues reported in 2018 that formerly incarcerated persons with a history of having been in solitary confinement were significantly more likely to report PTSD symptoms than those without solitary confinement,[95] and that this relationship remained significant even after screening out persons

[92] Haney, The Science of Solitary (2020) at 222.

[93] *Id.* at 235.

[94] *Id.*

[95] Brian Hagan, Emily Wang, Jenerius Aminawung, Carmen Albizu-Garcia, et al., History of Solitary Confinement Is Associated with Post-Traumatic Stress Disorder Symptoms among Individuals Recently Released from Prison, 95 J. URB. HEALTH 141-148 (2018).

with prior PTSD diagnoses and prior mental health conditions (but not those with a history of chronic mental health conditions).[96]

71. In 2020, Arthur Ryan and Jordan DeVylder reported on research showing that "[p]reviously incarcerated individuals with psychotic symptoms were […] approximately 50% more likely to report a history of solitary confinement that those without psychotic symptoms,"[97] leading the authors to recommend the development of alternative means for managing psychotic-illness-associated behavior among incarcerated individuals without resorting to punitive and potentially harmful practices, such as solitary confinement and excessive physical restraint.[98]

72. Also in 2020, Christopher Wildeman and Lars Andersen examined the long-term "re-entry" consequences of solitary confinement.[99] Noting that being placed in solitary confinement "is considered one of the most devastating experiences a human can endure,"[100] they used a complex set of statistical analyses

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[96] *Id.* at 145-146.

[97] Arthur Ryan and Jordan DeVylder, *Previously Incarcerated Individuals with Psychotic Symptoms Are More Likely to Report a History of Solitary Confinement*, 290 PSYCHIATRY RES. 113064 (2020), at 2.

[98] *Id.* at 3.

[99] Christopher Wildeman & Lars Andersen, *Long-term Consequences of Being Placed in Disciplinary Segregation* 58 CRIMINOLOGY 423-453 (2020). The authors focused specifically on what is called "disciplinary segregation" in Denmark—a form of solitary confinement in which prisoners spend 22-23 hours per day in a cell as punishment for disciplinary infractions, for terms that "cannot exceed 4 consecutive weeks for any offense." *Id.* at 427.

[100] *Id.* at 423.

to reach what they characterized as "two straightforward conclusions," namely that prisoners placed in solitary confinement "experience a larger percent increase in the risk of recidivism, measured here as a new conviction" as compared to prisoners who were not placed in solitary confinement, and that the isolated prisoners also suffered "decreas[ed] labor force participation" (i.e., had a more difficult time obtaining post-prison employment).[101] The authors concluded by noting that the use of solitary confinement in this context not only has long-term consequences for the persons subjected to it but "may also be counterproductive as placing prisoners in restrictive housing… can significantly compromise their chance of successfully reintegrating into society in two vitally important dimensions after release" (i.e., subsequent employment and criminal convictions).[102]

73. In addition to the empirical studies and literature reviews that I have discussed so far, there were several authoritative commentaries that were published by expert groups during this period, each of which reached very similar conclusions about the harmfulness of solitary confinement. The first one was the product of a long-standing collaboration between a national organization of high-level correctional administrators, formerly the Association of State Correctional

[101] *Id.* at 448.

[102] *Id.*

Administrators ("ASCA"), now the Correctional Leaders Association ("CLA"), and the Arthur Liman Center for Public Interest Law ("Liman Center"). The results of nationwide surveys have resulted in a series of monographs ("CLA/Liman Center Reports") on the nature and degree to which solitary confinement is used by correctional systems across the United States. The first of the two most recent ASCA/Liman Center Reports, published in October 2018, referenced the 2016 revision of the American Correctional Association Standards, which the ASCA/Liman Center authors acknowledged as "reflect[ing] the national consensus to limit the use of restrictive housing for pregnant women, juveniles, and seriously mentally ill individuals, as well as not to use a person's gender identity as the sole basis for segregation," a development they noted was consistent with the fact that "[c]orrectional systems around the country are engaging in targeted efforts to reform their practice of isolating prisoners."[103] Commenting on attempts to reduce the use of solitary confinement, undertaken not only by U.S. correctional officials but also by legislatures, courts, and international bodies, the 2018 ASCA/Liman Center Report also acknowledged that "these endeavors reflect the national and international consensus that restrictive housing imposes grave harms on individuals confined, on staff, and on the communities to which prisoners return. Once solitary

[103] Association of State Correctional Administrators & Liman Center for Public Interest Law, *Reforming Restrictive Housing: The 2018 ASCA-Liman Nationwide Survey of Time-in-Cell*, at 5 (Oct. 2018).

confinement was seen as a solution to a problem. Now prison officials around the United States are finding ways to solve the problem of restrictive housing."[104]

74. The specific reforms in the nature and use of solitary confinement that the 2018 ASCA/Liman Center Report documented included limiting the use of solitary confinement for only the most serious offenses, explicitly considering less restrictive alternatives before placing someone in solitary confinement (including special mental health and/or drug units and separate protective housing units), increasing the nature and frequency of monitoring the well-being of persons in solitary confinement, adding more structured and unstructured programming for persons in solitary confinement (including group programming) and otherwise increasing all forms of out-of-cell time, increased mental health training for staff members who work inside solitary confinement units, placing limits on the amount of time someone could spend in solitary confinement, and developing or implementing "step down" programs to facilitate post-solitary confinement adjustment. The 2018 ASCA/Liman Center Report ending by commenting on the Vera Institute of Justice publication that recommended limiting the number of people placed in solitary confinement, shortening the length of time people spend there, and improving conditions inside solitary confinement units.[105] Like Vera's,

[104] *Id.* at 6.

[105] *Id.* at 82-83.

the ASCA/Liman Center Report acknowledged that "[d]epriving individuals of virtually all normal sociability has long been understood as disabling," especially for mentally ill prisoners, where solitary confinement "adds insult to injury."[106]

75. In 2020, the same group (now the "CLA/Liman Center") reported on the most recent results of their periodic nationwide survey of solitary confinement practices in U.S. prisons.[107] They began by noting that, although solitary confinement was "[o]nce a regular tool of discipline," it had now become "a matter of grave concern."[108] Indeed, as they put it, many developments in recent years "underscore the need to reduce or to end the practice of holding individuals inside small cells for almost all hours of the day for weeks, months, or years."[109] The CLA/Liman Center Report went on to note that there now were many national and even global efforts underway to address the use of isolation in prisons. The authors were clear about the scientific underpinnings of these national and international initiatives: "Animating many of these efforts is documentation of the harms that flow from the deprivations that isolation entails," as provided by "[s]ocial

[106] *Id.* at 85.

[107] Correctional Leaders Association & Arthur Liman Association, *Time-In-Cell 2019: A Snapshot of Restrictive Housing, Based on a Nationwide Survey of U.S. Prison Systems*, (Sept. 2020) (hereafter "CLA/Liman Center Report").

[108] *Id.* at 1.

[109] *Id.*

scientists, joined by correctional and health professionals," who "continue to analyze the impact of prison conditions on the people who live and work in prison."[110] Despite a few commentators who have argued that the harmfulness of solitary confinement has been overstated, "most experts in this arena agree that the profound deprivations that radically restrict physical movements and human sociability have disabling effects."[111]

76. The CLA/Liman Report authors also reported that "legislation to limit the use of isolation in prison," curtailing its use with "pregnant prisoners, youth, and those with serious mental illness," had been recently introduced in at least twenty-nine jurisdictions in the United States.[112] In addition to state legislation, as they noted, the federal First Step Act of 2018 "prohibits 'the involuntary placement' of a juvenile 'alone in a cell, room, or area for any reason' other than as a response to 'a serious and immediate risk of physical harm to any individual.'"[113] The CLA/Liman Report also cited to a number of state and federal court decisions, "approving or extending settlement agreements in class action that challenged the constitutionality of long-term placement in isolation."[114] These cases arose in a

[110] *Id.* at 79.

[111] *Id.*

[112] *Id.* at 80.

[113] *Id.*

[114] *Id.* at 83.

number of states, including in Alabama, California, Connecticut, Georgia, Pennsylvania, and Virginia, and pertained in some instances to limiting the use of solitary confinement for prisoners in general, and in other instances to special limitations placed on its use with certain categories of prisoners (such as the mentally ill).[115] The CLA/Liman Report also pointed to numerous instances in which international bodies had formally condemned various forms of solitary confinement, including the United Nations Special Rapporteur on Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment reaffirming in 2020 the U.N.'s earlier conclusion that "subjecting prisoners to solitary confinement for more than fifteen days is regarded as a form of 'psychological torture," and this time "voic[ing] alarm at the excessive use of solitary confinement by correctional facilities in the United States,'" as well as several Canadian cases and pieces of litigation that drastically limited the use of solitary confinement to a period of no more than fifteen days.[116]

77. A separate authoritative commentary was also published in 2020, by the Northwestern Law Review. The "Consensus Statement from the Santa Cruz

[115] *Id.* at 84-85.

[116] *Id.* at 86.

Summit on Solitary Confinement and Health"[117] summarized the conclusions reached by an international group of experts who were drawn from a range of different disciplines, including corrections, mental health, medicine, law, and human rights. Building on the principles included in the Istanbul Statement,[118] which was published approximately a decade before the Santa Cruz Summit, the authors of the more recent document noted: "To advance solitary confinement reform based on the wealth of accumulated knowledge about its harmful effects, Summit participants developed a set of guiding principles to inform significant science- and ethics-based changes to correctional policies that can and should govern its practice."[119] The "guiding principles" included in the Santa Cruz Consensus Statement were based on the signatories' conclusion that because "[e]xisting research clearly establishes that solitary confinement subjects prisoners

[117] Consensus Statement from the Santa Cruz Summit on Solitary Confinement and Health, 115 NW. U. L. REV. 335-359 (2020) [hereafter "Santa Cruz Consensus Statement"].

[118] In formal recognition of the already substantial scientific evidence about the risk of harm from solitary confinement, a gathering of prominent trauma, mental health, and prison experts at the International Psychological Trauma Symposium in Turkey formulated what came to be known as the "Istanbul Statement on the Use and Effects of Solitary Confinement." The Statement summarized the well-known harms of solitary confinement and concluded that the practice should be employed only in exceptional circumstances, as an absolute last resort, and then only for as short a time as necessary. The Istanbul Statement was submitted to the U.N. General Assembly by the Special Rapporteur on Torture and Other Cruel, Inhumane or Degrading Treatment or Punishment in 2008. *See* Istanbul Statement on the Use and Effects of Solitary Confinement (Dec. 9, 2007), http://solitaryconfinement.org/uploads/Istanbul_expert_statement_on_sc.pdf [https://perma.cc/NNC5 - RLCL5YCF-6UHJ].

[119] Santa Cruz Consensus Statement at 344. The invitees "included researchers, clinicians, practicing lawyers, correctional officials and staff, human rights experts and advocates, and persons engaged in correctional monitoring and oversight." *Id.*

to significant risk of harm," the practice should be used, "if ever, only when absolutely necessary, and only for the shortest amount of time possible."[120] In addition, in light of their recognition that "solitary confinement is a form of physical and psychological trauma," that it "can have serious adverse effects on the correctional and clinical staff who are charged with administering it," and that it "achieves few, if any, penological purposes that cannot be accomplished through less harmful alternatives,"[121] the Santa Cruz Summit participants not only urged that solitary confinement be significantly limited overall but also recommended imposing mandatory training for prison staff about the harmfulness of the practice (to themselves and the prisoners), the use of meaningful outside and internal monitoring of solitary confinement practices, and in-depth studies of the kind of broader dysfunctions in prison operations that give rise to its overuse.

78. Finally, even as recently as 2021, several additional publications appeared that also addressed the negative effects of solitary confinement. For example, researchers Rebecca Trammell, Mackenzie Rundle, and Andrea Borrego published the results of an interview study they conducted with a random sample

[120] *Id.* at 346.

[121] *Id.* at 357.

of over 300 prisoners,[122] a subset of whom were confined in solitary confinement units, where "interviewees feel isolated from both staff members and each other," creating "a culture where no one trusts one another."[123] They observed that "[d]ue to the social isolation, inmates and staff are not able to engage in social reciprocity to build respect" and that the "social disconnect creates feelings of distrust among inmates."[124] Noting that, because "human beings are social animals," the punishment meted out in solitary confinement "creates pockets of loneliness and despair" that could even "increase violent acts" in the long run "if inmates come to believe that they have nothing to lose and they have made no positive connections with staff or each other."[125]

79. Also in 2021, Liat Tayer, Tomer Einat, and Anat Yaron Antar reported on the results of a small-scale qualitative interview study that they conducted with currently or formerly incarcerated persons who had spent between one month and ten years in solitary confinement in Israeli prisons.[126] They found

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[122] Rebecca Trammel, Mackenzie Rundle, & Andrea Borrego, *Anger, Frustration, and Snitching: Inmates Describe Structured Isolation in a High Tech Prison*, 42 DEVIANT BEHAV. 1067-1085 (2020).

[123] *Id.* at 1081.

[124] *Id.* at 1080.

[125] *Id.* at 1082. The authors further observed that "[i]f prison officials create an atmosphere where inmates are structurally isolated from each other and the staff members, the level of frustration will increase, and inmates might lash out." *Id.*

[126] Liat Tayer Tomer Einat & Anat Yaron Antar, The Long-Term Effects of Solitary Confinement From the Perspective of Inmates, 10 PRISON J. 652-674 (2021).

that their interviewees consistently reported suffering from a host of extremely negative psychological reactions to the experience, including the perception that solitary confinement was unjustly imposed and intensified their feelings of hostility toward and resentment of prison authorities. As the authors noted, "this leads many inmates to lose trust in the system, and act with increased violence against its representatives, with some of this violence also directed against themselves and their environment."[127] Indeed, the authors reported that the men saw solitary confinement "as unfairly and excessively punitive, filling them with anger, frustration and hatred."[128] In addition, all of the study participants reported suffering from a wide range of negative psychological reactions that they attributed to the time they had spent in solitary confinement. Many of these reactions lingered for "months and even years after their release," and included paranoia, emotional flatness, and difficulties adjusting to social life.[129] These and other negative aftereffects that, again, "all of the participants" casually connected to the time they had spent in solitary confinement, were described as "irreversible and

[127] *Id.* at 664 (emphasis in original).

[128] *Id.* at 659.

[129] *Id.* at 660.

seriously affect[ing] their wellbeing and quality of life."[130] The authors summarized further:

> The perceived illegitimacy of separation, together with the severe mental and physical conditions and short-term effects it involves, lead many inmates to experience intense anger, stress, and anxiety, that persist months and even years after their release, exacerbated by paranoid ideation.[131]

80. Tayer et al. concluded with a discussion of what they characterized as a "worrying picture," namely one in which persons exposed to solitary confinement suffered a host of negative effects that "must not be regarded as merely a problem that affects life in prison" but also "has a dramatic potential impact on the community that assimilates the inmates after their release."[132] They concluded further that the use of solitary confinement was "an inappropriate, violent practice, in which the prison authority exerts an excessive force against the population for which it is responsible to safeguard,"[133] and recommended a host of significant reforms in the way the practice should be employed.

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[130] *Id.* at 661.

[131] *Id.* at 665 (emphasis in original).

[132] *Id.* at 666.

[133] *Id.* at 667-668. The reforms included strict time limits (of no more than 10-15 days), weekly assessments and psychiatric evaluations by independent, outside experts in exceptional cases that extended beyond that limit, legal counsel for persons considered for placement in solitary confinement, and that "living conditions in separation units must be dramatically improved," including larger cells, greater amounts of personal property (including televisions and computers), more out-of-cell time, opportunities for meaningful programming, and social contact with other prisoners. *Id.* at 668.

81. Another study published in 2021 by Hannah Pullen-Blasnik and her colleagues examined racial disproportions in the likelihood of spending time in solitary confinement and the potential for negative long-term social impacts and public health effects.[134] Beginning with the acknowledgement that "[s]olitary confinement has been found to have a variety of negative effects," and that "extended solitary confinement" has been "especially harmful," including being "associated with anxiety, depression, impulse control disorder, social withdrawal, lethargy, apathy, self-harming, and suicidal behavior," Pullen-Blasnik et al. looked at whether different racial groups were more likely than others to be subjected to this damaging experience. The authors reported that although most of the racial disparities were attributable to differential rates of incarceration rather than disparate treatment inside the prisons, they found that "black men are about 8.2 times more likely to spend at least a day in solitary confinement compared to white men by 32" and that this disparity "increases to 10.6 times for periods of confinement of at least a year."[135] They concluded further that: "Because solitary confinement has harmful effects on health and well-being, and federal courts have scrutinized conditions of extreme isolation, the pattern of imprisonment itself"—

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[134] Hannah Pullen-Blasnik Jessica Simes & Bruce Western, *The Population Prevalence of Solitary Confinement*, 7 SCI. ADVANCES 1-9 (2021).

[135] *Id.* at 5.

including the pattern of racially disproportionate exposure to solitary confinement they uncovered—"may have a social impact, threatening public health and collective security against cruel and unusual punishment guaranteed by the Constitution."[136]

82. Also in 2021, Bruce Western and his colleagues reported the results of research they conducted with men housed in solitary confinement/restricted housing units in a Pennsylvania prison.[137] Although the lengths of stay were moderate compared to some other studies (averaging 38 days), Western and his colleagues found that both the extreme material deprivation the men experienced and, especially, the significant amount of social isolation to which they were subjected were associated with high levels of "psychological distress." Specifically, "many respondents reported intrusive thoughts, panic attacks, and feelings of anger."[138] In addition, "[p]sychological distress in solitary confinement was higher among men with a history of mental illness."[139] Once prisoners were returned to general population living conditions, psychological distress abated. As the authors noted, "[q]ualitative accounts of social process can provide empirical

[136] *Id.* at 6.

[137] Bruce Western, Jessica Simes, & Kendra Bradner, *Solitary Confinement and Institutional Harm*, 3 INCARCERATION 1 (2021), [hereafter, "Western, Simes, & Bradner (2021)"].

[138] *Id.* at 19.

[139] *Id.*

evidence of mechanisms" that can "connect prison conditions to psychological distress."[140] Indeed, the qualitative interviews Western et al. conducted with isolated prisoners led them to conclude that "threats to human dignity appear to be woven into the structure of solitary confinement itself, where material deprivation, social isolation, and psychological distress are commonplace."[141]

83. In addition to the publications that I have summarized so far, there are two more studies also published in just the last year that indirectly acknowledged the harmful effects of solitary confinement, as well as the widespread scientific and also professional consensus that exists that its harmfulness should be addressed by implementing significant changes in whether, how often, and how solitary confinement should be used. The first is a published study that I co-authored with Brie Williams and our colleagues at the University of California, San Francisco School of Medicine, evaluating the development, implementation, and impact of a series of solitary confinement reforms undertaken by the North Dakota Department

[140] *Id.* at 9.

[141] *Id.* at 20. Western, Simes, & Bradner also summarized the results of peer-reviewed studies published since 2000 that "analyzed data from the U.S. prisons and included measures of solitary confinement and psychological well-being." *Id.* at 5. Of those that used a control group or conducted pre-post comparisons, the only two that reported null effects both used the same flawed data collected in the methodologically compromised O'Keefe et al. or "Colorado Study" that I discussed earlier in this expert report.

of Corrections.[142] The reforms—inspired in large part by an international collaboration project that my colleagues and I helped develop and oversee and in which North Dakota prison officials participated—were intended to and did substantially and rapidly reduce (by nearly 75%) the number of persons held in solitary confinement and, among other things, provided enhanced services to mentally ill prisoners in lieu of punitively isolating them. As we reported, the dramatic reductions in the use of solitary confinement and the modifications in the way the units were structured and operated "resulted in a host of positive changes in a range of policies and practices that were reported as beneficial to the health and well-being of both incarcerated people and staff."[143]

84. The second indirect confirmation of the harmfulness of solitary confinement came about in part as a result of the same international collaboration project that Brie Williams and her colleagues and I developed and oversaw. Based on the explicit recognition of the harmfulness of solitary confinement (to staff and incarcerated persons alike), leaders of the Oregon Department of Corrections have proactively sought to significantly reduce its use of solitary confinement and

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[142] David Cloud, Dallas Augustine, Cyrus Ahalt, Craig Haney, Lisa Peterson, Colby Braun, & Brie Williams, "*We Just Needed to Open the Door": A Case Study of the Quest to End Solitary Confinement in North Dakota*, 9:28 HEALTH AND JUSTICE 1 (2021).

[143] *Id.* at 23.

transform the conditions and procedures under which it operates.[144] Thus, in a 2021 publication preliminarily assessing one component of this overall reform project,[145] Ryan Labrecque and his colleagues positively evaluated a solitary confinement reform project that was intended to target what are understood by researchers and correctional decision-makers as "mechanisms believed to bring out problem behavior and poor health among the people who are placed in restrictive housing, namely the excessive deprivations and limited social interactions with others."[146] Labrecque et al. further acknowledged that "[p]roviding more opportunities for time out-of-cell, quality social interaction, and cultural changes away from coercion *should* lessen [the] incidence of misconduct and *improve indicators of health and psychological well-being*" among prisoners.[147] They further embraced the notion that programs that "provide more out-of-cell time, increased social

[144] I was one of the co-directors of the University of California, San Francisco "Amend" program that took Oregon Department of Corrections officials to Norway in 2018, accompanied Oregon correctional staff on a 2019 return trip, and consulted with them about Norway-inspired reforms in their solitary confinement unit. *See* C. Ahalt, C. Haney, K. Ekhaugen, & B. Williams, *Role of US-Norway Exchange in Placing Health and Well-Being at the Center of US Prison Reform*, 110 AM. J. OF PUBLIC HEALTH S1, S27-29 (2020). Along with my colleagues, I helped to devise the specific interventions that Oregon correctional officials undertook in creating the program that was evaluated in the Labrecque et al. publication discussed in this paragraph.

[145] R. Labrecque, J. Tostlebe, B. Useem, & D. Pyrooz, *Reforming solitary confinement: The development, implementation, and processes of a restrictive housing step down reentry program in Oregon* 9:23 HEALTH AND JUSTICE 1 (2021) [hereafter, "Labrecque et al. (2021)"].

[146] *Id.* at 3.

[147] *Id.* at 3 (emphasis added).

interaction, and more opportunities for rehabilitative treatment" are designed to "alleviat[e] potential *physiological and psychological harms* of restrictive housing" and to increase a prisoner's "success upon returning to the general prison population or community."[148] Labrecque et al. concluded the article by stating that "[a] stronger dosage" of the kind of isolation-reducing reforms that I and my colleagues were instrumental in devising "should further alleviate the potentially harmful aspects of this type of [isolated] housing which, in turn, could improve indicators of prisoner health and well-being."[149]

85. And, most recently, a study published in 2022 by Jaquelyn Jahn and her colleagues found that persons housed in solitary confinement in Pennsylvania suffered from a host of physical and psychological symptoms that were worsened as a result of the conditions under which they were housed.[150] The researchers addressed what they termed the medical and mental health "burdens" of a sample of 99 prisoners in solitary confinement through structured interviews that were conducted within two months of the prisoners' arrival in the isolation unit. Over

[148] *Id.* at 8 (emphasis added). He returned to the same fact near the end of the article, noting that "restrictive housing specifically, is often criticized for producing adverse effects on prisoner health and well-being" and that "[a] number of initiatives have sought to alleviate the potential harmful effects of incarceration, including a national movement to reform the use of solitary confinement." *Id.* at 12.

[149] *Id.* at 13.

[150] Jaquelyn Jahn, Nicolette Bardele, Jessica Simes, & Bruce Western, *Clustering of Health Burdens in Solitary Confinement: A Mixed Methods Approach*, 2 QUALITATIVE RESEARCH IN HEALTH 1 (2022).

three quarters of the respondents reported suffering from some kind of physical health diagnosis and, although the sample explicitly excluded persons who had been diagnosed with serious mental illness (who were housed in a special unit that was not included in the study), "over half reported a mental health diagnosis."[151] Even respondents who were described as "relatively healthy" found solitary confinement "particularly challenging," including nearly two-thirds of whom said it was "generally stressful," including suffering idleness-related ruminations, panic attacks, "feeling depressed in solitary confinement," and receiving "delayed and insufficient healthcare" that "engendered feelings of mistrust and skepticism" among many of them.[152] Other respondents reported that their pre-existing mental health conditions "made the stressors of solitary confinement more challenging," including "worsen[ing] pre-existing problems with depression."[153] The researchers also found that, irrespective of the prisoners' prior mental health condition, many of them reported witnessing or hearing about suicide in solitary confinement. However, suicidal feelings were most common among those who did have identifiable mental health problems; indeed, "[t]heir isolation and idleness—along

[151] *Id.* at 3.

[152] *Id.* at 4.

[153] *Id.* at 5.

with prior trauma—were seen as intensifying these thoughts."[154] Especially among those prisoners with more significant physical health concerns, "insufficient exercise, poor sleep quality, and uncomfortable bedding" were linked to ongoing medical concerns.[155] The authors concluded that "conditions of solitary confinement exacerbate both mental and physical health problems,"[156] and pointed to the "need for policies that further restrict the use of solitary confinement, in addition to monitoring and oversight of prisons and jails to prevent the health harms of solitary confinement and improve healthcare standards and delivery in this context."[157]

86. This brings to 30 the total number of published studies and review published in just the last few years that either directly or indirectly reported on the wide range of damaging effects that solitary confinement inflicts on prisoners.[158]

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[154] *Id.*

[155] *Id.* at 5-6.

[156] *Id.* at 6.

[157] *Id.* at 7.

[158] Here I am counting the "mixed" conclusions of Astor et al. (2018), and note that they were reached without the benefit of the 29 other publications that appeared after their review was completed, all of which provided corroborated, extended, or otherwise, supported the scientific consensus that solitary confinement incurs a wide range of damaging effects. However, I have omitted one study entirely from my discussion of recent publications: Glenn Walters, *Do Restrictive Housing and Mental Health Needs Add Up to Psychological Deterioration*, 45(9) CRIM. JUST. & BEHAV. 1347-1362 (2018), because it is based entirely on data from the uninterpretable Colorado Study I discussed in note 14 *supra*. In fact, the particular data Walters reused were especially problematic because they were based on a measure that even the Colorado researchers found was too unreliable for them to interpret, admitting, among other things, that its scores did not necessarily accurately reflect what they were supposed to measure, contained potential rater bias, did not correlate well with self-report data in the study, may have reflected

These 30 different articles were written by several dozen different researchers, from a variety of different disciplines, reporting on individual empirical studies or syntheses of multiple studies, and are in addition to the extensive prior research that was conducted in the United States and elsewhere. Thus, to be clear, there was already an existing, substantial body of scientific knowledge about the harmful effects of solitary confinement. As I have noted, the research on which that knowledge was based was summarized in numerous reviews of the empirical literature, including my own nearly 100-page publication co-authored with Mona Lynch a quarter of a century ago (in 1997).[159] The more recently published research, reviews, and authoritative commentaries that I reviewed in the immediately preceding paragraphs further buttress and add to that already existing, substantial body of knowledge.

87. As with the previous research, there is a remarkable degree of consistency to recent publications as summarized above. Thus, of the 30 that I reviewed (listed in Appendix C), 29 of them reported clearly and consistently on a wide range of effects and in many instances a new array of data—much of it recently acquired—that all documented and discussed the various negative effects

less distress than inmates validly reported, and was not completed by a sufficient number of staff members.

[159] Haney & Lynch, The Psychological Consequences of Solitary (1997), *supra* note 17.

of solitary confinement.[160] The one exception, a literature review that characterized the prior literature as "mixed," clearly did not have the benefit of the many publications that appeared after it, publications in which the conclusions that numerous authors reached about the harmfulness of solitary confinement were anything but "mixed."

88. As I acknowledged earlier, no one study is or could be perfect. However, taken together, this research consistently maps the many dimensions of suffering and the significant risks of harm to which people in solitary confinement are subjected. Thus, the scientific database on the negative effects of solitary confinement per se is substantial and continues to grow. Commentators who claim otherwise are either simply uninformed or for some reason have chosen to ignore the consistent and consistently mounting evidence of the significant risk of serious harm.

89. Of course, not every isolated prisoner will experience all nor necessarily even most of the range of adverse reactions that I and other researchers have documented, as described in the above paragraphs. But the nature, magnitude, and consistency of the negative psychological consequences underscore the stressfulness of this kind of confinement, the lengths to which prisoners must go to

[160] The one exception that declared the record "mixed," Astor et al., was published in 2018, a time frame that did not allow its authors to consider any of the subsequently published 29 empirical studies, literature reviews, or authoritative commentaries.

adapt and adjust to it, and the grave risk of harm that is created by isolation and its broad range of severe stressors and deprivations. The devastating effects of solitary confinement are reflected in the disproportionately high numbers of suicide deaths and incidents of self-harm and self-mutilation that occur there. Years of sustained research on solitary confinement and the observable outcomes produced by this form of incarceration across time and locality underscore its severe, negative impact on the cognitive, emotional, and behavioral functioning of persons exposed to it. The effects are long-lasting and, for some persons, will prove irreversible, even fatal.

3) The Broader "Science of Solitary" That Provides a Framework for Understanding the Harmfulness of Solitary Confinement.

90. It is also important to explain the larger scientific framework in which a meaningful understanding of the harmful nature of solitary confinement is grounded. As I noted previously, Appendix D contains a 2020 article that I wrote on "the science of solitary" (and referenced above) in which some of the most recent published research on the topic of the wide-ranging harmful effects of social isolation is summarized.[161]

91. As I pointed out in that article, relying on knowledge from a larger and more elaborately studied area of research is a standard form of scientific

[161] Haney, The Science of Solitary (2020).

reasoning. Scientific understanding is regularly enriched through "triangulation" in which research findings from other studies in theoretically related areas are logically connected to data collected in another, similar setting or on a related topic. In the case of solitary confinement, the application of relevant findings from numerous elaborate, sophisticated scientific inquiries conducted on social isolation, loneliness, and social exclusion in general provide insights into and a framework for understanding how and why isolation in the much harsher setting of prison has such damaging effects.

92. Although the amount of scientific study devoted to the issues of social isolation, loneliness, and social exclusion has increased dramatically in recent years, psychology and other behavioral sciences have recognized for decades that social contact is fundamental to establishing and maintaining emotional health and well-being.[162] Social neuroscientist Matthew Lieberman has observed that the human brain is literally "wired to connect" to other persons, and meaningful social contact is crucial to normal human development.[163] He noted further that: "Our brains evolved to experience threats to our social connections in much the same way they experience physical pain . . . The neural link between social and physical

[162] See Roy Baumeister & Mark Leary, The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation, 117 PSYCHOLOGICAL BULLETIN, 497 (1995).

[163] Matthew Lieberman, Social: Why Our Brains Are Wired to Connect (2013).

pain also ensures that staying socially connected will be a lifelong need, like food and warmth."[164] Impairing or depriving persons of the ability to connect to others undermines psychological well-being, produces a range of interrelated maladies in juveniles as well as adults, and increases physical morbidity and mortality.[165]

93. Although I will not belabor these issues by repeating the citations to all of the scientific studies that document these important research findings, it is worth emphasizing that we now know that social isolation and loneliness are significant risk factors for a wide range of mental health problems, including depression and anxiety among juveniles and adults, psychosis, paranoia, and suicidal behavior, and have been implicated in the persistence of delusional or psychotic beliefs, a lack of insight into one's psychiatric symptoms, and higher rates of hospitalization and re-hospitalization. In addition, there are a number of well-documented harmful physical and medical outcomes associated with social isolation and loneliness in humans, including adverse effects on neurological and endocrinological processes, possible effects on the structural and functional integrity of multiple brain regions. The fact that social isolation, loneliness, and

[164] *Id.* at 4-5.

[165] *See, e.g.*, Linda Chernus, *Separation/Abandonment/Isolation Trauma: What We Can Learn From Our Nonhuman Primate Relatives*, 8 JOURNAL EMOTIONAL ABUSE, 469, 470 (2008) (discussing the harmful developmental consequences of early social deprivation in the form of maternal loss for humans and non-human primates).

social exclusion are implicated in adverse physical or medical outcomes have led them to be identified as a "global health concern" and the basis of a global health crisis leading, among other things, the current Surgeon General of the United States Vivek Murthy to write a book describing many of the negative effects of isolation and recommending ways to combat them.[166] In fact, as noted in my 2020 article referenced herein, in a study designed to contribute to "a larger global effort to combat the adverse health impacts of social isolation,"[167] a National Academy of Sciences Committee concluded that the negative consequences of social isolation "may be comparable to or greater than other well-established risk factors such as smoking, obesity, and physical inactivity."[168]

94. Thus, social isolation is a scientifically known psychological and even physical toxin. The concentrated doses of it that prisoners in solitary confinement are subjected to, along with the other potentially damaging deprivations that typically accompany it, underscore its significant risk of serious harm.

VII. Solitary Confinement Places Mentally Ill Prisoners at A Heightened Risk of Serious Harm

[166] Vivek Murthy, *Together: The Healing Power of Human Connection in a Sometimes Lonely World* (2020).

[167] National Academies of Science, Engineering, and Medicine, *Social Isolation and Loneliness in Older Adults* xii (2020).

[168] *Id.* at 2–12. Another group of prominent researchers termed the experience of loneliness a "lethal behavioral toxin" that accounted for more annual deaths than cancer or strokes. Dilip Jeste, Ellen Lee, and Stephanie Cacioppo, *Battling the Modern Behavioral Epidemic of Loneliness: Suggestions for Research and Interventions*, 77(6) JAMA PSYCHIATRY 553, 553 (2020).

95. Although isolated confinement creates risks of harm for all persons subjected to it, most experts acknowledge that the adverse psychological effects of such confinement vary as a function not only of the specific nature and duration of the isolation (such that more deprived conditions experienced for longer amounts of time are likely to have more detrimental consequences), but also as a function of the characteristics of the prisoners subjected to it. Very rarely, an unusually resilient prisoner may report being able to withstand even harsh forms of solitary confinement with few or minor adverse effects, especially if the exposure is relatively brief. But the overwhelming majority of prisoners acknowledge some form of often very severe psychological distress and harm, as I have reported above. Moreover, there are many prisoners who are especially vulnerable to the psychological pain and pressure of solitary confinement. Mentally ill prisoners are particularly at risk in these environments and have been precluded from them in some jurisdictions precisely because of this.[169]

96. Several factors explain the heightened vulnerability of persons with mental illness in isolated confinement. For one, as I have noted, solitary confinement or isolation is a significantly more stressful and psychologically

[169] *See, e.g,* Madrid v. Gomez, 889 F.Supp. 1146 (N.D. Cal. 1995); Ruiz v. Johnson, 37 F.Supp.2d 855 (S.D. Tex. 1999); Jones'El v. Berge, 164 F. Supp.2d 1096 (W.D. Wisc. 2001); Ind. Protection and Advocacy Comm'n v. Comm'r, Ind. Dep't of Corr., No. 1:08-CV-01317-TWP, 2012 WL 6738517 (S.D. Ind. 2012).

painful form of prison confinement. Mentally ill prisoners are generally more sensitive and reactive to psychological stressors and emotional pain. In many ways, the harshness and severe levels of deprivation that are imposed on them in isolation are the antithesis of the benign and socially supportive atmosphere that mental health clinicians seek to create within therapeutic environments. Not surprisingly, mentally ill prisoners generally deteriorate and decompensate when they are placed in harsh and stressful isolation units.

97. Some of the exacerbation of mental illness that occurs in isolated confinement comes about as a result of the critically important role that social contact and social interaction play in maintaining psychological equilibrium. Psychologists and psychiatrists know that social contact and social interaction are essential components in the creation and maintenance of normal social identity and social reality. One of the most fundamental ways that solitary confinement psychologically destabilizes prisoners is by undermining their sense of self or social identity and eroding their connection to a shared social reality. Isolated prisoners have few if any opportunities to receive feedback about their feelings and beliefs, which become increasingly untethered from any normal social context. As Cooke and Goldstein put it:

> A socially isolated individual who has few, and/or superficial contacts with family, peers, and community cannot benefit from social comparison. Thus, these individuals have no mechanism to evaluate their own beliefs and actions in terms of reasonableness or acceptability

> within the broader community. They are apt to confuse reality with their idiosyncratic beliefs and fantasies and likely to act upon such fantasies, including violent ones.[170]

In extreme cases, a related pattern emerges: isolated confinement becomes so painful, so bizarre, and so impossible to make sense of that some prisoners create their own reality—they live in a world of fantasy instead of the intolerable one that surrounds them.

98. Finally, many of the direct negative psychological effects of isolation are themselves very similar if not identical to certain symptoms of mental illness. Even though these specific effects are typically thought to be somewhat less chronic or persistent when produced by the prisoner's conditions of confinement than those that derive from a diagnosable mental illness, when they occur in combination, they are likely to exacerbate not only the outward manifestation of the symptoms but also the internal experience of the disorder. For example, many studies have documented the degree to which isolated confinement contributes to feelings of lethargy, hopelessness, and depressed mood. For clinically depressed prisoners, these situational effects are likely to exacerbate their pre-existing chronic condition and lead to worsening of their depressed state. Similarly, the mood swings that some prisoners report in isolation would be expected to amplify

[170] Compare, also, Margaret Cooke & Jeffrey Goldstein, *Social Isolation and Violent Behavior*, 2 FORENSIC REPORTS, 287, 288 (1989).

the emotional instability that prisoners diagnosed with bipolar disorder suffer. Prisoners who suffer from disorders of impulse control would likely find their pre-existing condition made worse by the frustration, irritability, and anger that many isolated prisoners report experiencing. And prisoners prone to psychotic breaks may suffer more in isolated confinement due to conditions that deny them the stabilizing influence of normal social feedback.

99. As a result of the special vulnerability of mentally ill prisoners to the psychological effects of solitary confinement, numerous corrections officials and courts that have considered the issue have prohibited them from being placed in such units.[171] Mental health staff in many prison systems with which I am familiar are charged with the responsibility of screening prisoners in advance of their possible placement in isolation (so that the mentally ill can be excluded). In addition, mental health staff in these systems also typically conduct ongoing monitoring of non-mentally ill prisoners housed in solitary confinement, to detect signs of emerging mental illness that would require their removal.

100. For example, twenty-seven years ago, one federal court that was presented with systematic evidence of the psychological risk of harm that solitary confinement entailed concluded that the seriously mentally ill must be excluded

[171] *See* the cases cited in footnote 169.

from such environments. The court noted that those prisoners for whom the psychological risks were "particularly"—and unacceptably—high included anyone suffering from "overt paranoia, psychotic breaks with reality, or massive exacerbations of existing mental illness as a result of the conditions in [solitary confinement]."[172] The court elaborated on this conclusion by noting that those who should be excluded from isolated confinement included:

> [T]he already mentally ill, as well as persons with borderline personality disorders, brain damage or mental retardation, impulse-ridden personalities, or a history of prior psychiatric problems or chronic depression. For these inmates, placing them in [isolated confinement] is the mental equivalent of putting an asthmatic in a place with little air to breathe. The risk is high enough, and the consequences serious enough, that we have no hesitancy in finding that the risk is plainly "unreasonable."[173]

101. In addition to federal courts that have directly considered the issue, many professional organizations have recommended drastic limitations on the use of solitary confinement or the outright prohibitions against placing certain vulnerable populations (such as the mentally ill) in isolated housing. For example, the American Psychological Association acknowledged that solitary confinement was associated with heightened risk of self-mutilation and suicidality, a range of adverse psychological symptoms such as anxiety, depression, sleep disturbance,

[172] Madrid v. Gomez, 889 F. Supp. 1146, 1265 (N.D. Cal. 1995) (citation omitted).

[173] *Id.*

paranoia and aggression as well as the exacerbation of pre-existing mental illness and trauma-related symptoms.[174] The American Public Health Association issued a statement in which it detailed the public-health harms posed by solitary confinement, urged correctional authorities to "eliminate solitary confinement for security purposes unless no other less restrictive option is available to manage a current, serious, and ongoing threat to the safety of others," and recommended that "[p]unitive segregation should be eliminated."[175]

102. Similarly, the American Psychiatric Association recommended that "Prolonged segregation of adult inmates with serious mental illness, with rare exceptions, should be avoided due to the potential for harm to such inmates."[176] The position statement of the Society of Correctional Physicians similarly acknowledged "that prolonged segregation of inmates with serious mental illness, with rare exceptions, violates basic tenets of mental health treatment," and

[174] American Psychological Association, *Solitary Confinement of Juvenile Offenders* (2017), available at https://www.apa.org/about/gr/issues/cyf/solitary.pdf.

[175] American Public Health Association, *Solitary Confinement as a Public Health Issue: Policy No. 201310* (2013), available at http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1462.

[176] American Psychiatric Association, *Position Statement on Segregation of Prisoners with Mental Illness* (2012), available at http://www.psych.org/File%20Library/Learn/Archives/ps2012_PrisonerSegregation.pdf. See, also, the statements of psychiatrist Jeffrey Metzner and attorney Jamie Fellner on this issue: Jeffrey Metzner & Jamie Fellner, 38 *Solitary Confinement and Mental Illness in U.S. Prisons: A Challenge for Medical Ethics*, J. OF THE AM. ACAD. OF PSYCHIATRY & L., at 104-108 (2010).

recommended against holding these prisoners in segregated housing for more than four weeks).[177]

103. Other organizations have also recommended banning the use of solitary confinement outright for use with prisoners who are mentally ill, including the United Nations,[178] and the National Commission on Correctional Healthcare.[179] Similarly, the National Alliance on Mental Illness issued a statement "oppos[ing] the use of solitary confinement and equivalent forms of extended administrative segregation for persons with mental illnesses."[180]

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[177] Society of Correctional Physicians, *Position Statement: Restricted Housing of Mentally Ill Inmates*, available at https://accpmed.org/restricted_housing_of_mentally.php#:~:text=Position%20Statement,tenets%20of%20mental%20health%20treatment.

[178] Comm'n on Crime Prevention & Crim. Just., *United Nations Standard Minimum Rules for the Treatment of Prisoners*, U.N. Econ. & Soc. Council (2015) (commonly known as the "Mandela Rules.")

[179] Specifically, the NCCHC Position Statement included the provision that juveniles, mentally ill individuals, and pregnant women should be "excluded from solitary confinement of any duration" (emphasis added), and that health care staff should advocate to correctional officials that stays in solitary confinement should never exceed 15 days continuous duration, and also advocate to them that they should bar juveniles and mentally ill prisoners entirely from such confinement. Nat'l Comm'n on Correctional Health Care, *Solitary Confinement (Isolation)* (2016), available at https://www.ncchc.org/solitary-confinement-isolation-2016/.

[180] Nat'l Alliance on Mental Illness, *Public Policy Platform of the National Alliance on Mental Illness*, at Section 9.8 (12th ed. 2016) available at https://www.nami.org/About-NAMI/Policy-Platform. As I noted earlier, in 2018, a group of international legal, medical, mental health, and human rights scholars and experts were convened in Santa Cruz, California, to produce a set of "guiding principles" designed to advance solitary confinement reform in the United States and internationally. The principles established in the Consensus Statement that resulted included the overarching admonitions that solitary confinement should only be used when absolutely necessary (i.e., in response to exigent circumstances that cannot be addressed any other way), for the shortest amount of time possible (from periods of a few hours to no more than a 15-day maximum), and never with certain vulnerable populations (such as juveniles and the mentally ill). Craig Haney, Brie Williams, & Cyrus Ahalt, *Consensus Statement from the Santa Cruz Summit on Solitary Confinement and Health*, 115 NW. U. L. REV. 335, 335-60 (2020).

104. Finally, a number of jurisdictions across the U.S. are moving towards severely restricting or ending the use of long-term solitary confinement based on the scientific findings and outcomes I have summarized above. For example, in 2017, Colorado, led by the director of its Department of Corrections, barred the use of isolation in its prisons other than for serious disciplinary infractions and limited the length of stay to no longer than 15 days. In 2019, New Jersey passed a law prohibiting use of solitary confinement in prisons and jails statewide for more than 20 consecutive days or longer than 30 days during a 60-day period. New Jersey also prohibited use of solitary confinement for people with serious mental illness. Also in 2019, Washington State Department of Corrections joined a number of states that have entered into a partnership with the Vera Institute of Justice to reduce the use of restrictive housing.

105. I am a member of this Advisory Board of the Vera Institute program, called Safe Alternatives to Segregation, and can attest that, over the last several years, a number of state correctional and county jail systems also have enrolled in this program and have implemented steps to significantly reduce the population of prisoners held in isolation/solitary confinement, significantly improve the conditions of confinement to which they are subjected, and imposed time limits on lengths of stay in these units.

106. Even more recently, New York State enacted legislation prohibiting prison and jails statewide from holding people in solitary confinement for more than 15 consecutive days, and disallowing solitary confinement completely for people under 22 or over 54 years of age, those who are pregnant, people with disabilities, and people with serious mental illness.[181]

VIII. The Scientific Evidence of the Harmful Effects of Solitary Confinement Can Be Reasonably and Justifiably Applied to Comparable Conditions, Practices and Procedures

107. To summarize: The accumulated weight of the scientific evidence that I have cited to and summarized above demonstrates the negative psychological effects of isolated confinement—what happens to people who are deprived of normal social contact for extended periods of time. This evidence underscores the substantial dangers that isolation creates for human beings in the form of mental pain and suffering and increased tendencies towards self-harm and suicide, and even physical damage, susceptibility to harmful medical conditions, and heightened mortality. The evidence further underscores the psychological and

[181] Links to news reports that detail these solitary confinement reforms can be found here: Troy Closson, *New York Will End Long-Term Solitary Confinement in Prisons and Jails*, N.Y. Times (Apr. 24, 2021), available at https://www.nytimes.com/2021/04/01/nyregion/solitary-confinement-restricted.html; Rick Raemisch, *Why I Ended the Horror of Long-Term Solitary in Colorado's Prisons*, Am. C.L. Union (Dec. 5, 2018), available at https://www.aclu.org/blog/prisoners-rights/solitary-confinement/why-i-ended-horror-long-term-solitary-colorados-prisons; *Gov. Murphy Signs Isolated Confinement Restriction Act Into Law*, Am. C.L. Union N.J. (July 11, 2019), available at https://www.aclu-nj.org/news/2019/07/11/gov-murphy-signs-isolated-confinement-restriction-act-law; Rachel Friederich, *Washington Corrections Continues Restrictive Housing Reforms*, Dept. of Corrections Wash. State (Oct. 28, 2020), available at https://www.doc.wa.gov/news/2020/10282020.htm.

medical importance of meaningful social contact and interaction, and in essence establishes these things as identifiable human needs. Over the long-term, they may be as essential to a person's psychological well-being as adequate food, clothing, and shelter are to his or her physical well-being.

108. Established principles of scientific reasoning and the logic of empirical science allow for the reasonable and justified extrapolation of one set of findings to conditions, practices, and procedures that are similar or identical in nature. In this context, this means that the scientific conclusions that have been reached with respect to the harmfulness of solitary confinement can and should be generalized to other similar or identical circumstances and to persons who, because of where they are held and how they are treated, are similarly situated to those persons who have been studied in prior research.

IX. The Use of Solitary Confinement in the Virginia Department of Corrections

109. For reasons that I discuss below, it is my opinion that the scientific findings that I have summarized at length in the above paragraphs can be reasonably extrapolated and properly applied to the Step-Down Program that is the focus of the present case. That opinion is based on my review of the key written policies, key procedures, and plaintiffs' affidavits, my consideration of the body of scientific literature I have discussed in detail above, and my knowledge, skill, and

expertise in analyzing the nature and effects of solitary confinement in numerous other prison systems.

110. There are several important factors that establish the fact that what is referred to as "the Step-Down Program" at Red Onion State Prison ("ROSP") and Wallens Ridge State Prison ("WRSP") is essentially what is commonly known as isolated, solitary or supermax-type confinement. For one, the cells in which the prisoners are confined for extensive periods of time are small, sparsely furnished (especially for prisoners at the beginning stages of the program). Thus, according to the documents I have reviewed, the cells used for the Step-Down Program are 8x10 feet. At the IM-0 and SM-0 levels, where all prisoners must begin their pathways in confinement, they are furnished with only a bed and a toilet with a slot in the door through which communication with prison officials may take place.[182] While prisoners who are able to progress through the different levels of the pathway beyond IM-0 and SM-0 are able to earn more privileges such as televisions in their cells, this can only occur after the initial mandatory minimum periods, and only if the prisoner is able to actually progress through the requirements of the program which is at the discretion of prison staff.[183]

[182] Hammer Aff. ¶ 24.

[183] Segregation Reduction Step-Down Plan (Feb. 2020), Appendix F and G, VADOC-00053480 [hereinafter "2020 Step-Down Plan"].

111. In addition, conditions of confinement in the isolation units include extremely limited out-of-cell time. Prisoners spend almost the entire day in their cells and are subject to intrusive cavity searches whenever they leave or enter their cell.[184] Although the most recent policy purports to allow "four hours of out of cell time" per day for prisoners, meaning a minimum confinement of 20 hours per day; this was a change made in 2020, only after this lawsuit was commenced. Previous to the newly enacted policy, prisoners were allowed a maximum of only two hours of recreation daily.[185] Moreover, although this policy purportedly increases the amount of time prisoners would spend out-of-cell, there is an outstanding factual question as to whether this occurs in practice. In my experience, department of corrections written policies and procedures are frequently aspirational rather than actual. This is especially true in solitary confinement units, where what is actually being done or delivered in a unit and on the ground frequently falls short of the standards or requirements set by written policies. In the additional inquiry that I will conduct, I will examine and assess the quantity and quality of out-of-cell time actually provided to prisoners in lieu of this policy change.

[184] OPA 841.4 2021, at 11-12.

[185] 2020 Step-Down Plan, Appendix A, at 39, VADOC-00053480; Segregation Reduction Step-Down Plan (Sept. 2017), Appendix A, at 43 (hereinafter "2017 Step-Down Plan").

112. In fact, despite the new policy, I note that some prisoners report that they often are denied recreation or opportunities for programming, seemingly arbitrarily and sometimes for multi-day stretches, resulting in their average daily out-of-cell time being substantially less than four hours and reflecting more severe solitary confinement conditions.[186] Even where prisoners do receive the amount of out-of-cell time allotted under policy, prisoners report that they are confined and leashed, alone, to empty cages that resemble dog kennels for outdoor recreation.[187] They also report that there are often K-9s nearby, at times acting aggressively towards them, while they are in the caged rec pens, including instances in which prisoners have been attacked or bitten while engaging in recreation.[188]

113. Further, the cages are all situated next to and around each other. This means that, as prisoners report, those who are mentally unwell can and do act out by throwing feces or shoving them through the fencing of the cages. Other prisoners seeking to engage in outdoor recreation cannot avoid exposure to this behavior.[189] Other out-of-cell programming typically entails the use of "therapeutic

[186] Hammer Aff. ¶ 25.

[187] Riddick Aff. ¶ 4; 2017 Step-Down Plan, Appendix F and G, at 54 and 57.

[188] Wall Aff. ¶ 4.

[189] Riddick Aff. ¶ 4.

modules" (essentially single-seat cages) or restraining prisoners in "program chairs" to which they are shackled by both their ankles and wrists.[190]

114. The nature and duration of the time prisoners can spend in these units are also problematic. Thus, there is no maximum amount of time a prisoner can be kept at the initial and most restrictive Level S or progressed through each level of the IM or SM pathways. In addition, prisoners are required to spend minimum amounts of time at each level before progressing, which means that all prisoners assigned to IM-0 spend at least six months in the most restrictive conditions possible on that pathway, and those assigned to SM-0 spend at least three months at that level.[191] As noted previously, the negative effects of solitary confinement can be seen after shorter durations (e.g., the United Nations Mandela Rules define solitary confinement for longer than 15 days as "torture"),[192] meaning that all prisoners placed in this program are exposed to the significant risks of harms outlined in the literature that I have discussed.

115. For all of these reasons, it is my opinion that the conditions of extreme social isolation and enforced idleness described in the documents that I have reviewed are very similar (and perhaps identical) to the types of isolation

[190] 2020 Step-Down Plan, at 13-14, VADOC-00053480.

[191] *Id.* at Appendix F and G.

[192] *See* note 178.

conditions that I have seen and studied in numerous other correctional institutions, as well as to those referred to and described in the literature that I summarized above. Such conditions are harsh and severe and are precisely the kind that create a significant risk of substantial harm for all the prisoners who are subjected to them.

116. In addition, the documents that I reviewed indicated that VDOC has no written policy prohibiting prisoners suffering from what is traditionally referred to as serious mental illness (SMI) in what are traditionally referred to as solitary confinement or supermax-type units.[193] Indeed, it is clear that such prisoners, including some Named Plaintiffs, have been and are likely currently housed in such units within ROSP and WRSP.[194] This is true for both prisoners who had mental health diagnoses that predated their entry into these units, or even prison, as well as those who developed such a diagnosis while housed in these units. Based on the documents I have reviewed, prisoners on the SM pathway of the Step-Down Program may become eligible for assignment to the Shared Allied Management ("SAM") Pod.[195] However, this option is not available to prisoners placed on the IM pathway, and requires prisoners with mental illness to still progress through the initial SM pathway levels before eligibility can be achieved, meaning that

[193] 2020 Step-Down Plan, VADOC-00053480; OPA 830.A 2018.

[194] Khavkin Aff. ¶ 19; Cavitt Aff. ¶ 3.

[195] 2020 Step-Down Plan, at 31-32, VADOC-00053480; OPA 830.A 2018, at 6.

prisoners with pre-existing or developed mental illness are not adequately diverted.[196]

117. It is further apparent that some of the seriously mentally ill prisoners in these units, including those who are on psychotropic medications, have been subjected to the use of chemical agents, a practice that is apparently permitted by VDOC policy.[197] In my professional opinion, this practice exacerbates an already existing significant risk of serious harm. As I have noted, mentally ill prisoners are prone to deterioration and decompensation in solitary confinement. Their worsening behavior, which often includes acting out and rule infractions, is typically the product of their mental illness, exacerbated by the fact that they have been inappropriately placed in solitary confinement where their conditions predictably worsen. Punishing them in these harsh and potentially dangerous ways for behavior that they cannot control, and that has been exacerbated by the decisions of corrections officials themselves, is singularly inappropriate and dangerous.

118. I reviewed the affidavits of several named plaintiffs who are now or have previously been confined in the restrictive housing units. These plaintiffs describe symptoms of mental suffering, increased mental illness, suicidal thoughts

[196] 2020 Step-Down Plan, at 32, VADOC-00053480.

[197] Riddick Aff. ¶ 12(e).

and acts, and incidents of self-harm, including repeated acts of self-mutilation.[198] This is confirmed by some limited data I have been able to review that indicates higher proportions of self-harm incidents as well as suicide attempts and completions in these units as compared to in general population.[199] The problems described by the plaintiffs are consistent with the types of symptoms and suffering that I would expect to find in a system with the conditions, policies, and practices I have noted exist in the Step-Down Program.

119. Finally, it should be noted that the placement of seriously mentally ill prisoners in isolated confinement is not only harmful to them, but also increases the risks and harmfulness of isolated confinement for other prisoners as well. Out-of-control mentally ill prisoners whose conditions may worsen in isolated confinement may become assaultive to staff and other prisoners, may engage in loud and otherwise noxious behavior (e.g., smearing themselves in feces), and precipitate forceful interventions (e.g., the use of chemical agents) that adversely affect the well-being of everyone in the housing unit.

X. Conclusion

120. The accumulated weight of the scientific evidence that I cited to and summarized above clearly demonstrated the negative psychological effects of

[198] Hammer Aff. ¶ 28.

[199] VADOC-00044583.

isolated confinement—what happens to people who are deprived of normal social contact for extended periods of time. I noted that there was substantial scientific evidence underscoring the substantial dangers that isolation creates for human beings.

121. The significant risk of harm of solitary confinement includes subjecting people to mental pain and suffering, increased tendencies towards self-harm and suicide, and even physical damage, susceptibility to harmful medical conditions, and heightened mortality. The evidence underscores the psychological and medical importance of meaningful social contact and interaction. It, in essence, establishes these things as identifiable human needs. Over the long-term, they may be as essential to a person's psychological well-being as adequate food, clothing, and shelter are to his or her physical well-being.

122. Knowledgeable experts as well as a host of professional scientific, legal, human rights, and even correctional organizations now recognize that placing people in solitary confinement puts them at significant risk of serious harm. That harm can and sometimes does occur very early in the course of the experience, is potentially harmful for everyone exposed but especially to vulnerable populations, such as persons who are mentally ill, and the resulting damage can be long-lasting. Indeed, when it leads to self-harm and suicide, the consequences can be permanent and even fatal.

123. Indeed, the fact that prisoners who suffer from mental illness are less able to tolerate the painful experience of isolation or solitary confinement is an extension of another widely accepted scientific framework. All other things equal, mentally ill persons are more susceptible in general to stressful and traumatic experiences of the sort that occur more often in solitary confinement. In addition, many of the most prevalent adverse effects of isolation (such as depression) are similar to and aggravate many of the symptoms that are associated with various forms of mental illness, adding to or worsening already existing psychiatric conditions. Finally, isolation removes people from the stabilizing and normalizing influence of social contact and social connection, undermining personal identity and one's sense of self. This is especially problematic for mentally ill persons whose contact with social reality may already be fragile and tenuous.

124. The opinions I have expressed are based on a substantial body of sound science, amassed over a period of many years. What was already well-known about the significant risk of harm which solitary confinement imposes on those subjected to it has been corroborated in research conducted over the last several years, adding to the already substantial body of knowledge about harmfulness. This knowledge is also rooted in a larger scientific framework, one that establishes and explains the nature of the harms that social isolation incurs in society at large. That body of research is empirically rich and theoretically sound

and it helps to ground what is known about the harmfulness of solitary confinement.

125. I hold the above stated opinions to a reasonable degree of scientific certainty.

Under 42 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 20 th day of June, 2022.

Craig Haney Ph.D, J.D.

Craig Haney, Ph.D., J.D.

APPENDIX A

CURRICULUM VITAE

Craig William Haney
Distinguished Professor of Psychology
UC Presidential Chair, 2015-2018
University of California, Santa Cruz 95064

home address:	317 Ocean View Ave. Santa Cruz, California 95062
phone:	(831) 459-2153
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PREVIOUS EMPLOYMENT

2015-2018	University of California Presidential Chair
2014-present	Distinguished Professor of Psychology, University of California, Santa Cruz
1985-2014	University of California, Santa Cruz, Professor of Psychology
1981-85	University of California, Santa Cruz, Associate Professor of Psychology
1978-81	University of California, Santa Cruz, Assistant Professor of Psychology
1977-78	University of California, Santa Cruz, Lecturer in Psychology
1976-77	Stanford University, Acting Assistant Professor of Psychology

EDUCATION

1978	Stanford Law School, J.D.
1978	Stanford University, Ph.D. (Psychology)

1972	Stanford University, M.A. (Psychology)
1970	University of Pennsylvania, B.A.

HONORS AWARDS GRANTS

2022	Nominated for the Social Science Research Council's Albert O. Hirschman Prize for excellence in social and behavioral science.
	Psychology Department "Most Inspiring Instructor"
2021	Finalist, Association of American Publishers, Professional and Scholarly Excellence (PROSE) Award for Excellence in Social Science (for Criminality in Context: Psychological Foundations of Criminal Justice Reform).
2020	Finalist, Stockholm Prize in Criminology (for "outstanding achievements in criminological research or for the application of research results by practitioners for the reduction of crime and the advancement of human rights").
2018	Emerald Literati Award for "Outstanding Paper" (for "Reducing the Use and Impact of Solitary Confinement in Corrections").
2016	Vera Institute of Justice "Reimagining Prisons" Initiative Advisory Council.
	Psychology Department "Most Inspiring Instructor"
2015	University of California Presidential Chair (2015-2018 Term)
	Martin F. Chemers Award for Outstanding Research in Social Science
	Excellence in Teaching Award (Academic Senate Committee on Teaching).
	President's Research Catalyst Award for "UC Consortium on Criminal Justice Healthcare" (with Brie Williams and Scott Allen).
	Vera Institute of Justice "Safe Alternatives to Segregation" (SAS) Initiative Advisory Council.
	Who's Who in Psychology (Top 20 Psychology Professors in California) [http://careersinpsychology.org/psychology-degrees-schools-employment-ca/#ca-psych-prof]

2014	Distinguished Faculty Research Lecturer, University of California, Santa Cruz.
2013	Distinguished Plenary Speaker, American Psychological Association Annual Convention.
2012	Appointed to National Academy of Sciences Committee to Study the Causes and Consequences of High Rates of Incarceration in the United States.
	Invited Expert Witness, United States Senate, Judiciary Committee.
2011	Edward G. Donnelly Memorial Speaker, University of West Virginia Law School.
2009	Nominated as American Psychological Foundation William Bevan Distinguished Lecturer.
	Psi Chi "Best Lecturer" Award (by vote of UCSC undergraduate psychology majors).
2006	Herbert Jacobs Prize for Most Outstanding Book published on law and society in 2005 (from the Law & Society Association, for Death by Design).
	Nominated for National Book Award (by American Psychological Association Books, for Reforming Punishment: Psychological Limits to the Pains of Imprisonment).
	"Dream course" instructor in psychology and law, University of Oklahoma.
2005	Annual Distinguished Faculty Alumni Lecturer, University of California, Santa Cruz.
	Invited Expert Witness, United States House of Representatives, Subcommittee on Immigration, Border Security, and Claims, Committee on the Judiciary
	Arthur C. Helton Human Rights Award from the American Immigration Lawyers Association (co-recipient).
	Scholar-in-Residence, Center for Social Justice, Boalt Hall School of Law (University of California, Berkeley).

2004	"Golden Apple Award" for Distinguished Teaching, awarded by the Social Sciences Division, University of California, Santa Cruz.
	National Science Foundation Grant to Study Capital Jury Decision-making
2002	Santa Cruz Alumni Association Distinguished Teaching Award, University of California, Santa Cruz.
	United States Department of Health & Human Services/Urban Institute, "Effects of Incarceration on Children, Families, and Low-Income Communities" Project.
	American Association for the Advancement of Science/American Academy of Forensic Science Project: "Scientific Evidence Summit" Planning Committee.
	Teacher of the Year (UC Santa Cruz Re-Entry Students' Award).
2000	Invited Participant White House Forum on the Uses of Science and Technology to Improve National Crime and Prison Policy.
	Excellence in Teaching Award (Academic Senate Committee on Teaching).
	Joint American Association for the Advancement of Science-American Bar Association Science and Technology Section National Conference of Lawyers and Scientists.
1999	American Psychology-Law Society Presidential Initiative Invitee ("Reviewing the Discipline: A Bridge to the Future")
	National Science Foundation Grant to Study Capital Jury Decision-making (renewal and extension).
1997	National Science Foundation Grant to Study Capital Jury Decision-making.
1996	Teacher of the Year (UC Santa Cruz Re-Entry Students' Award).
1995	Gordon Allport Intergroup Relations Prize (Honorable Mention)
	Excellence in Teaching Convocation, Social Sciences Division
1994	Outstanding Contributions to Preservation of Constitutional Rights, California Attorneys for Criminal Justice.

1992	Psychology Undergraduate Student Association Teaching Award
	SR 43 Grant for Policy-Oriented Research With Linguistically Diverse Minorities
1991	Alumni Association Teaching Award ("Favorite Professor")
1990	Prison Law Office Award for Contributions to Prison Litigation
1989	UC Mexus Award for Comparative Research on Mexican Prisons
1976	Hilmer Oehlmann Jr. Award for Excellence in Legal Writing at Stanford Law School
1975-76	Law and Psychology Fellow, Stanford Law School
1974-76	Russell Sage Foundation Residency in Law and Social Science
1974	Gordon Allport Intergroup Relations Prize, Honorable Mention
1969-71	University Fellow, Stanford University
1969-74	Society of Sigma Xi
1969	B.A. Degree Magna cum laude with Honors in Psychology
	Phi Beta Kappa
1967-1969	University Scholar, University of Pennsylvania

UNIVERSITY SERVICE AND ADMINISTRATION

2010-2016	Director, Legal Studies Program
2010-2014	Director, Graduate Program in Social Psychology
2009	Chair, Legal Studies Review Committee
2004-2006	Chair, Committee on Academic Personnel
1998-2002	Chair, Department of Psychology
1994-1998	Chair, Department of Sociology

1992-1995	Chair, Legal Studies Program
1995 (Fall)	Committee on Academic Personnel
1995-1996	University Committee on Academic Personnel (UCAP)
1990-1992	Committee on Academic Personnel
1991-1992	Chair, Social Science Division Academic Personnel Committee
1984-1986	Chair, Committee on Privilege and Tenure

WRITINGS AND OTHER CREATIVE ACTIVITIES IN PROGRESS

Books:

Counting Casualties in the War on Prisoners: Toward a Just and Lasting Peace (working title, in preparation).

Articles:

"The Psychological Foundations of Capital Mitigation: Why Social Historical Factors Are Central to Assessing Culpability," in preparation.

PUBLISHED WRITINGS AND CREATIVE ACTIVITIES

Books

2020	Criminality in Context: The Psychological Foundations of Criminal Justice Reform. Washington, DC: American Psychological Association Books.
2014	The Growth of Incarceration in the United States: Exploring the Causes and Consequences (with Jeremy Travis, Bruce Western, et al.). [Report of the National Academy of Sciences Committee on the Causes and Consequences of High Rates of Incarceration in the United States.] Washington, DC: National Academy Press.
2006	Reforming Punishment: Psychological Limits to the Pains of Imprisonment, Washington, DC: American Psychological Association Books.

2005 Death by Design: Capital Punishment as a Social Psychological System. New York: Oxford University Press.

Monographs and Technical Reports

1989 Employment Testing and Employment Discrimination (with Hurtado). Technical Report for the National Commission on Testing and Public Policy. New York: Ford Foundation.

2005 Conditions of Confinement for Detained Asylum Seekers Subject to Expedited Removal (Appendix C in Study of Asylum Seekers in Expedited Removal As Authorized by Section 605 of International Religious Freedom Act of 1998).

Articles in Professional Journals and Book Chapters

2021 "Sykes's Prison in Context: Change and Continuity in the Life Span of a Penitentiary," in B. Crewe, A. Goldsmith, & M. Halsey (Eds.), Power and authority in the modern prison: Revisiting the *Society of Captives*. New York: Oxford University Press, in press.

"The Impact of Isolation on Brain Health" (with Vibol Heng and Richard Smeyne), in M. Zigmond, L. Rowland, & J. Coyle (Eds.), The Neurobiology of Brain Disorders: Biological Basis of Neurological and Psychiatric Disorders. Second Edition. Elsevier, in press.

"'We Just Need to Open the Door': A Case Study of North Dakota Department of Corrections' Quest to End Solitary Confinement" (with David Cloud, Dallas Augustine, Cyrus Ahalt, Lisa Peterson, Colby Braun, & Brie Williams), Heath & Justice, 9(28). https://doi.org/10.1186/s40352-021-00155-5

"The Death Qualification Process Continues to Render Capital Juries Less Representative and More Unfair. Amicus Journal, 42, 20-25.

"The Continuing Unfairness of Death Qualification: Changing Death Penalty Attitudes and Capital Jury Selection" (with Eileen Zurbriggen & Joanna Weill), Psychology, Public Policy, and Law, in press.

2020 "Solitary Confinement, Loneliness, and Psychological Harm," in Jules Lobel and Peter Scharff Smith (Eds.), Solitary Confinement: Effects, Practices, and Pathways to Reform (129-152). New York: Oxford University Press.

"Continuing to Acknowledge the Power of Dehumanizing Environments: Responding to Haslam, et al. (2019) and Le Texier (2019)" (with Philip Zimbardo), American Psychologist, 75(3), 400-402.

"Framing Criminal Justice and Crime in the News, 2015-2017" (with Camille Conrey), Journal of Crime and Justice, in press.

"The Science of Solitary: Expanding the Harmfulness Narrative," Northwestern Law Review, 115(1), 211-256.

"Consensus Statement from the Santa Cruz Summit on Solitary Confinement and Health" (with Brie Williams and Cyrus Ahalt), Northwestern University Law Review, 115(1), 335-360.

"Solitary Confinement is Not Solitude: The Worst Case Scenario of Being 'Along' in Prison," in Robert Coplan, Julie Bowker, & Larry Nelson (Eds.), Handbook of Solitude: Psychological Perspectives on Isolation, Social Withdrawal, and Being Alone (pp. 390-403). Second Edition. New York: Wiley-Blackwell, in press.

2019 "Afterword," in Robert Johnson, Condemned to Die: Life Under Sentence of Death (pp. 137-141). Second Edition. New York: Routledge.

"Changing Correctional Culture: Exploring the Role of U.S.-Norway Exchange in Placing Health and Well-Being at the Center of U.S. Prison Reform" (with Cyrus Ahalt, Brie Williams, and Kim Ekhaugen), American Journal of Public Health, 110(S1), S27-S29.

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"Death Qualification in Black and White: Racialized Decision-Making and Death-Qualified Juries" (with Mona Lynch), Law & Policy, 40(2), 148-171.

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MEMBERSHIP/ACTIVITIES IN PROFESSIONAL ASSOCIATIONS

American Psychological Association

American Psychology and Law Society

Law and Society Association

National Council on Crime and Delinquency

INVITED ADDRESSES AND PAPERS PRESENTED AT PROFESSIONAL ACADEMIC MEETINGS AND RELATED SETTINGS (SELECTED)

2019 "The Recent History of Corrections in Norway and the United States," Plenary Address, Justice Reinvestment Summit, Salem, OR, February.

"The Dimensions of Suffering in Solitary Confinement," Plenary Address, Washington College of Law at American University, Washington, DC, March.

"Implementing Norwegian Correctional Principles to Change Prison Culture in Oregon Prisons," Invited Address, Oregon Department of Corrections Leadership Team, Salem, OR, June.

"Humanizing American Jails and Prisons," Center for Court Innovation, International Summit, New York, NY, June.

"From the Stanford Prison Experiment to Supermax Prisons and Back Again: Changing the Narrative in Criminal Justice Reform,"

Invited Address, Norwegian Correctional Academy, Oslo, Norway, September.

Plenary Address, "Perspectives on Solitary Confinement," Northwestern University Law Review Symposium, Chicago, IL, November.

2018 "The Art and Science of Capital Mitigation," Federal Death Penalty Training Conference, Atlanta, Georgia, June.

"From Eastern State Penitentiary to Supermax Prisons," Safe Alternatives to Segregation Conference, Vera Institute of Justice, Philadelphia, PA, June.

Plenary Address, "Advancing Prisoners' Rights Through Law and Psychology," Denver Law Prisoners' Advocates Conference, University of Denver Sturm College of Law, Denver, CO, October.

"In Praise of Positivism in the Age of 'Fake News' and 'Alternative Facts,'" Research Frontiers Conference, Santa Cruz, CA, October.

2017 "Neuroscience in Policy: Solitary Confinement in California," Law & Neuroscience Conference, San Francisco, CA, February.

"In My Solitude: The Detrimental Effects of Solitary Confinement on the Brain," Exploratorium-Fisher Bay Observation Gallery, San Francisco, CA, February.

"Brief History of Correctional Reform in the United States," Community Corrections Partnership/Smart on Crime Community Forum, Santa Cruz Civic Auditorium, May.

"Reducing and Eliminating the Use of Solitary Confinement in Irish Prisons," Joint Conference with the Irish Prison Service, Department of Justice, and Irish Penal Reform Trust, Dublin, Ireland, June.

"The Emerging Consensus on When, for How Long, and On Whom Solitary Confinement Should Ever Be Imposed," Leadership, Culture and Managing Prisons: Knowledge Exchange between the USA and Europe (LEADERS), Trinity College, Dublin, Ireland, June.

"Sykes and Solitary: The Transformation of the Penal Subject in the Devolution from a 'Society of Captives' to Supermax Prisons," Power and Authority in Modern Prisons: Essays in Memory of

Gresham Sykes Workshop, Centre for Prison Research, Cambridge University, Cambridge, England, September.

"Context Is Everything: The Social Psychology of Imprisonment," Joint USA/Scandinavian Correctional Exchange Program, Oslo, Norway, September.

2016 "The Culture of Punishment," American Justice Summit, New York, January.

"Mental Illness and Prison Confinement," Conference on Race, Class, Gender and Ethnicity (CRCGE), University of North Carolina Law School, Chapel Hill, NC, February.

"Reforming the Treatment of California's Mentally Ill Prisoners: Coleman and Beyond," Meeting of the UC Consortium on Criminal Justice & Health, San Francisco, April.

"Bending Toward Justice? The Urgency (and Possibility) of Criminal Justice Reform," UC Santa Cruz Alumni Association "Original Thinkers" Series, San Jose, CA (March), and Museum of Tolerance, Los Angeles (April).

"Isolation and Mental Health," International and Inter-Disciplinary Perspectives on Prolonged Solitary Confinement, University of Pittsburgh Law School, Pittsburgh, PA, April.

"Mechanisms of Moral Disengagement in the Treatment of Prisoners" (with Joanna Weill), Conference of the Society for the Study of Social Issues, Minneapolis, June.

2015 "Reforming the Criminal Justice System," Bipartisan Summit on Criminal Justice Reform, American Civil Liberties Union/Koch Industries co-sponsored, Washington, DC, March.

"PrisonWorld: How Mass Incarceration Transformed U.S. Prisons, Impacted Prisoners, and Changed American Society," Distinguished Faculty Research Lecture, UC Santa Cruz, March.

"Think Different, About Crime and Punishment," Invited Lecture, UC Santa Cruz 50th Anniversary Alumni Reunion, April.

"The Intellectual Legacy of the Civil Rights Movement: Two Fifty-Year Anniversaries," College 10 Commencement Address, June.

"Race and Capital Mitigation," Perspectives on Racial and Ethnic Bias for Capital and Non-Capital Lawyers, New York, September.

"The Dimensions of Suffering in Solitary Confinement," Vera Institute of Justice, "Safe Alternatives to Solitary Confinement-A Human Dignity Approach" Conference, Washington, DC, September.

"Mental Health and Administrative Segregation," Topical Working Group on the Use of Administrative Segregation in the U.S., National Institute of Justice/Department of Justice, Washington, DC, October.

"The Psychological Effects of Segregated Confinement," Ninth Circuit Court of Appeals "Corrections Summit," Sacramento, CA, November.

"How Can the University of California Address Mass Incarceration in California and Beyond?," Keynote Address, Inaugural Meeting of the UC Consortium on Criminal Justice & Health, San Francisco, November.

2014 "Solitary Confinement: Legal, Clinical, and Neurobiological Perspectives," American Association for the Advancement of Science (AAAS), Chicago, IL February.

"Overcrowding, Isolation, and Mental Health Care, Prisoners' Access to Justice: Exploring Legal, Medical, and Educational Rights," University of California, School of Law, Irvine, CA, February.

"The Continuing Significance of Death Qualification" (with Joanna Weill), Annual Conference of the American Psychology-Law Society, New Orleans, March.

"Using Psychology at Multiple Levels to Transform Adverse Conditions of Confinement," Society for the Study of Social Issues Conference, Portland, OR, June.

"Humane and Effective Alternatives to Isolated Confinement," American Civil Liberties Union National Prison Project Convening on Solitary Confinement, Washington, DC, September.

"Community of Assessment of Public Safety," Community Assessment Project of Santa Cruz County, Year 20, Cabrillo College, November.

"Overview of National Academy of Sciences Report on Causes and Consequences of High Rates of Incarceration," Chief Justice Earl Warren Institute on Law & Social Policy, Boalt Hall Law School, Berkeley, CA, November.

"Presidential Panel, Overview of National Academy of Sciences Report on Causes and Consequences of High Rates of Incarceration," American Society for Criminology, San Francisco, November.

"Presidential Panel, National Academy of Sciences Report on Consequences of High Rates of Incarceration on Individuals," American Society for Criminology, San Francisco, November.

"Findings of National Academy of Sciences Committee on the Causes and Consequences of High Rates of Incarceration," Association of Public Policy Analysis and Management Convention (APPAM), Albuquerque, NM, November.

"Politics and the Penal State: Mass Incarceration and American Society," New York University Abu Dhabi International Scholars Program, Abu Dhabi, United Arab Emirates, December.

2013 "Isolation and Mental Health," Michigan Journal of Race and Law Symposium, University of Michigan School of Law, Ann Arbor, MI, February.

"Social Histories of Capital Defendants" (with Joanna Weill), Annual Conference of Psychology-Law Society, Portland, OR, March.

"Risk Factors and Trauma in the Lives of Capital Defendants" (with Joanna Weill), American Psychological Association Annual Convention, Honolulu, HI, August.

"Bending Toward Justice: Psychological Science and Criminal Justice Reform," Invited Plenary Address, American Psychological Association Annual Convention, Honolulu, HI, August.

"Severe Conditions of Confinement and International Torture Standards," Istanbul Center for Behavior Research and Therapy, Istanbul, Turkey, December.

2012 "The Psychological Consequences of Long-term Solitary Confinement," Joint Yale/Columbia Law School Conference on Incarceration and Isolation, New York, April.

"The Creation of the Penal State in America," Managing Social Vulnerability: The Welfare and Penal System in Comparative Perspective, Central European University, Budapest, Hungary, July.

2011 "Tensions Between Psychology and the Criminal Justice System: On the Persistence of Injustice," opening presentation, "A Critical Eye on Criminal Justice" lecture series, Golden Gate University Law School, San Francisco, CA, January.

"The Decline in Death Penalty Verdicts and Executions: The Death of Capital Punishment?" Presentation at "A Legacy of Justice" week, at the University of California, Davis King Hall Law School, Davis, CA, January.

"Invited Keynote Address: The Nature and Consequences of Prison Overcrowding—Urgency and Implications," West Virginia School of Law, Morgantown, West Virginia, March.

"Symposium: The Stanford Prison Experiment—Enduring Lessons 40 Years Later," American Psychological Association Annual Convention, Washington, DC, August.

"The Dangerous Overuse of Solitary Confinement: Pervasive Human Rights Violations in Prisons, Jails, and Other Places of Detention" Panel, United Nations, New York, New York, October.

"Criminal Justice Reform: Issues and Recommendation," United States Congress, Washington, DC, November.

2010 "The Hardening of Prison Conditions," Opening Address, "The Imprisoned" Arthur Liman Colloquium Public Interest Series, Yale Law School, New Haven, CN, March.

"Desensitization to Inhumane Treatment: The Pitfalls of Prison Work," panel presentation at "The Imprisoned" Arthur Liman Colloquium Public Interest Series, Yale Law School, New Haven, CN, March.

"Mental Ill Health in Immigration Detention," Department of Homeland Security/DOJ Office for Civil Rights and Civil Liberties, Washington, DC, September.

2009 "Counting Casualties in the War on Prisoners," Keynote Address, at "The Road to Prison Reform: Treating the Causes and Conditions of Our Overburdened System," University of Connecticut Law School, Hartford, CN, February.

"Defining the Problem in California's Prison Crisis: Overcrowding and Its Consequences," California Correctional Crisis Conference," Hastings Law School, San Francisco, CA, March.

2008 "Prisonization and Contemporary Conditions of Confinement," Keynote Address, Women Defenders Association, Boalt Law School, University of California, November.

"Media Criminology and the Empathic Divide: The Continuing Significance of Race in Capital Trials," Invited Address, Media, Race, and the Death Penalty Conference, DePaul University School of Law, Chicago, IL, March.

"The State of the Prisons in California," Invited Opening Address, Confronting the Crisis: Current State Initiatives and Lasting Solutions for California's Prison Conditions Conference, University of San Francisco School of Law, San Francisco, CA, March.

"Mass Incarceration and Its Effects on American Society," Invited Opening Address, Behind the Walls Prison Law Symposium, University of California Davis School of Law, Davis, CA, March.

2007 "The Psychology of Imprisonment: How Prison Conditions Affect Prisoners and Correctional Officers," United States Department of Justice, National Institute of Corrections Management Training for "Correctional Excellence" Course, Denver, CO, May.

"Statement on Psychologists, Detention, and Torture," Invited Address, American Psychological Association Annual Convention, San Francisco, CA, August.

"Prisoners of Isolation," Invited Address, University of Indiana Law School, Indianapolis, IN, October.

"Mitigation in Three Strikes Cases," Stanford Law School, Palo Alto, CA, September.

"The Psychology of Imprisonment," Occidental College, Los Angeles, CA, November.

2006 "Mitigation and Social Histories in Death Penalty Cases," Ninth Circuit Federal Capital Case Committee, Seattle, WA, May.

"The Crisis in the Prisons: Using Psychology to Understand and Improve Prison Conditions," Invited Keynote Address, Psi Chi (Undergraduate Psychology Honor Society) Research Conference, San Francisco, CA, May.

"Exoneration and 'Wrongful Condemnation': Why Juries Sentence to Death When Life is the Proper Verdict," Faces of Innocence Conference, UCLA Law School, April.

"The Continuing Effects of Imprisonment: Implications for Families and Communities," Research and Practice Symposium on Incarceration and Marriage, United States Department of Health and Human Services, Washington, DC, April.

"Ordinary People, Extraordinary Acts," National Guantanamo Teach In, Seton Hall School of Law, Newark, NJ, October.

"The Next Generation of Death Penalty Research," Invited Address, State University of New York, School of Criminal Justice, Albany, NY, October.

2005 "The 'Design' of the System of Death Sentencing: Systemic Forms of 'Moral Disengagement in the Administration of Capital Punishment, Scholar-in-Residence, invited address, Center for Social Justice, Boalt Hall School of Law (Berkeley), March.

"Humane Treatment for Asylum Seekers in U.S. Detention Centers," United States House of Representatives, Washington, DC, March.

"Prisonworld: What Overincarceration Has Done to Prisoners and the Rest of Us," Scholar-in-Residence, invited address, Center for Social Justice, Boalt Hall School of Law (Berkeley), March.

"Prison Conditions and Their Psychological Effects on Prisoners," European Association for Psychology and Law, Vilnius, Lithuania, July.

2004 "Recognizing the Adverse Psychological Effects of Incarceration, With Special Attention to Solitary-Type Confinement and Other Forms of 'Ill-Treatment' in Detention," International Committee of the Red Cross, Training Program for Detention Monitors, Geneva, Switzerland, November.

"Prison Conditions in Post-"War on Crime" Era: Coming to Terms with the Continuing Pains of Imprisonment," Boalt Law School Conference, After the War on Crime: Race, Democracy, and a New Reconstruction, Berkeley, CA, October.

"Cruel and Unusual? The United States Prison System at the Start of the 21st Century," Invited speaker, Siebel Scholars Convocation, University of Illinois, Urbana, IL, October.

"The Social Historical Roots of Violence: Introducing Life Narratives into Capital Sentencing Procedures," Invited Symposium, XXVIII International Congress of Psychology, Beijing, China, August.

"Death by Design: Capital Punishment as a Social Psychological System," Division 41 (Psychology and Law) Invited Address, American Psychological Association Annual Convention, Honolulu, HI, July.

"The Psychology of Imprisonment and the Lessons of Abu Ghraib," Commonwealth Club Public Interest Lecture Series, San Francisco, May.

"Restructuring Prisons and Restructuring Prison Reform," Yale Law School Conference on the Current Status of Prison Litigation in the United States, New Haven, CN, May.

"The Effects of Prison Conditions on Prisoners and Guards: Using Psychological Theory and Data to Understand Prison Behavior," United States Department of Justice, National Institute of Corrections Management Training Course, Denver, CO, May.

"The Contextual Revolution in Psychology and the Question of Prison Effects: What We Know about How Prison Affects Prisoners and Guards," Cambridge University, Cambridge, England, April.

"Death Penalty Attitudes, Death Qualification, and Juror Instructional Comprehension," American Psychology-Law Society, Annual Conference, Scottsdale, AZ, March.

2003 "Crossing the Empathic Divide: Race Factors in Death Penalty Decisionmaking," DePaul Law School Symposium on Race and the Death Penalty in the United States, Chicago, October.

"Supermax Prisons and the Prison Reform Paradigm," PACE Law School Conference on Prison Reform Revisited: The Unfinished Agenda, New York, October.

"Mental Health Issues in Supermax Confinement," European Psychology and Law Conference, University of Edinburgh, Scotland, July.

"Roundtable on Capital Punishment in the United States: The Key Psychological Issues," European Psychology and Law Conference, University of Edinburgh, Scotland, July.

"Psychology and Legal Change: Taking Stock," European Psychology and Law Conference, University of Edinburgh, Scotland, July.

"Economic Justice and Criminal Justice: Social Welfare and Social Control," Society for the Study of Social Issues Conference, January.

"Race, Gender, and Class Issues in the Criminal Justice System," Center for Justice, Tolerance & Community and Barrios Unidos Conference, March.

2002 "The Psychological Effects of Imprisonment: Prisonization and Beyond." Joint Urban Institute and United States Department of Health and Human Services Conference on "From Prison to Home." Washington, DC, January.

"On the Nature of Mitigation: Current Research on Capital Jury Decisionmaking." American Psychology and Law Society, Mid-Winter Meetings, Austin, Texas, March.

"Prison Conditions and Death Row Confinement." New York Bar Association, New York City, June.

2001 "Supermax and Solitary Confinement: The State of the Research and the State of the Prisons." Best Practices and Human Rights in Supermax Prisons: A Dialogue. Conference sponsored by University of Washington and the Washington Department of Corrections, Seattle, September.

"Mental Health in Supermax: On Psychological Distress and Institutional Care." Best Practices and Human Rights in Supermax Prisons: A Dialogue. Conference sponsored by University of Washington and the Washington Department of Corrections, Seattle, September.

"On the Nature of Mitigation: Research Results and Trial Process and Outcomes." Boalt Hall School of Law, University of California, Berkeley, August.

"Toward an Integrated Theory of Mitigation." American Psychological Association Annual Convention, San Francisco, CA, August.

Discussant: "Constructing Class Identities—The Impact of Educational Experiences." American Psychological Association Annual Convention, San Francisco, CA, August.

"The Rise of Carceral Consciousness." American Psychological Association Annual Convention, San Francisco, CA, August.

2000 "On the Nature of Mitigation: Countering Generic Myths in Death Penalty Decisionmaking," City University of New York Second International Advances in Qualitative Psychology Conference, March.

"Why Has U.S. Prison Policy Gone From Bad to Worse? Insights From the Stanford Prison Study and Beyond," Claremont Conference on Women, Prisons, and Criminal Injustice, March.

"The Use of Social Histories in Capital Litigation," Yale Law School, April.

"Debunking Myths About Capital Violence," Georgetown Law School, April.

"Research on Capital Jury Decisionmaking: New Data on Juror Comprehension and the Nature of Mitigation," Society for Study of Social Issues Convention, Minneapolis, June.

"Crime and Punishment: Where Do We Go From Here?" Division 41 Invited Symposium, "Beyond the Boundaries: Where Should Psychology and Law Be Taking Us?" American Psychological Association Annual Convention, Washington, DC, August.

1999 "Psychology and the State of U.S. Prisons at the Millennium," American Psychological Association Annual Convention, Boston, MA, August.

"Spreading Prison Pain: On the Worldwide Movement Towards Incarcerative Social Control," Joint American Psychology-Law Society/European Association of Psychology and Law Conference, Dublin, Ireland, July.

1998 "Prison Conditions and Prisoner Mental Health," Beyond the Prison Industrial Complex Conference, University of California, Berkeley, September.

"The State of US Prisons: A Conversation," International Congress of Applied Psychology, San Francisco, CA, August.

"Deathwork: Capital Punishment as a Social Psychological System," Invited SPPSI Address, American Psychological Association Annual Convention, San Francisco, CA, August.

"The Use and Misuse of Psychology in Justice Studies: Psychology and Legal Change: What Happened to Justice?," (panelist), American Psychological Association Annual Convention, San Francisco, CA, August.

"Twenty Five Years of American Corrections: Past and Future," American Psychology and Law Society, Redondo Beach, CA, March.

1997 "Deconstructing the Death Penalty," School of Justice Studies, Arizona State University, Tempe, AZ, October.

"Mitigation and the Study of Lives," Invited Address to Division 41 (Psychology and Law), American Psychological Association Annual Convention, Chicago, August.

1996 "The Stanford Prison Experiment and 25 Years of American Prison Policy," American Psychological Association Annual Convention, Toronto, August.

1995 "Looking Closely at the Death Penalty: Public Stereotypes and Capital Punishment," Invited Address, Arizona State University College of Public Programs series on Free Speech, Affirmative Action and Multiculturalism, Tempe, AZ, April.

"Race and the Flaws of the Meritocratic Vision," Invited Address, Arizona State University College of Public Programs series on Free Speech, Affirmative Action and Multiculturalism, Tempe, AZ, April.

"Taking Capital Jurors Seriously," Invited Address, National Conference on Juries and the Death Penalty, Indiana Law School, Bloomington, February.

1994 "Mitigation and the Social Genetics of Violence: Childhood Treatment and Adult Criminality," Invited Address, Conference on the Capital Punishment, Santa Clara Law School, October, Santa Clara.

1992 "Social Science and the Death Penalty," Chair and Discussant, American Psychological Association Annual Convention, San Francisco, CA, August.

1991 "Capital Jury Decisionmaking," Invited panelist, American Psychological Association Annual Convention, Atlanta, GA, August.

1990 "Racial Discrimination in Death Penalty Cases," Invited presentation, NAACP Legal Defense Fund Conference on Capital Litigation, August, Airlie, VA.

1989 "Psychology and Legal Change: The Impact of a Decade," Invited Address to Division 41 (Psychology and Law), American Psychological Association Annual Convention, New Orleans, LA., August.

"Judicial Remedies to Pretrial Prejudice," Law & Society Association Annual Meeting, Madison, WI, June.

"The Social Psychology of Police Interrogation Techniques" (with R. Liebowitz), Law & Society Association Annual Meeting, Madison, WI, June.

1987 "The Fourteenth Amendment and Symbolic Legality: Let Them Eat Due Process," APA Annual Convention, New York, N.Y. August.

"The Nature and Function of Prison in the United States and Mexico: A Preliminary Comparison," InterAmerican Congress of Psychology, Havana, Cuba, July.

1986 Chair, Division 41 Invited Address and "Commentary on the Execution Ritual," APA Annual Convention, Washington, D.C., August.

"Capital Punishment," Invited Address, National Association of Criminal Defense Lawyers Annual Convention, Monterey, CA, August.

1985 "The Role of Law in Graduate Social Science Programs" and "Current Directions in Death Qualification Research," American Society of Criminology, San Diego, CA, November.

"The State of the Prisons: What's Happened to 'Justice' in the '70s and '80s?" Invited Address to Division 41 (Psychology and Law); APA Annual Convention, Los Angeles, CA, August.

1983 "The Role of Social Science in Death Penalty Litigation." Invited Address in National College of Criminal Defense Death Penalty Conference, Indianapolis, IN, September.

1982 "Psychology in the Court: Social Science Data and Legal Decision-Making." Invited Plenary Address, International Conference on Psychology and Law, University College, Swansea, Wales, July.

1982 "Paradigms in Conflict: Contrasting Methods and Styles of Psychology and Law." Invited Address, Social Science Research Council, Conference on Psychology and Law, Wolfson College, Oxford University, March.

1982 "Law and Psychology: Conflicts in Professional Roles." Invited paper, Western Psychological Association Annual Meeting, April.

1980 "Using Psychology in Test Case Litigation," panelist, American Psychological Association Annual Convention, Montreal, Canada, September.

"On the Selection of Capital Juries: The Biasing Effects of Death Qualification." Paper presented at the Interdisciplinary Conference on Capital Punishment. Georgia State University, Atlanta, GA, April.

"Diminished Capacity and Imprisonment: The Legal and Psychological Issues," Proceedings of the American Trial Lawyers Association, Mid-Winter Meeting, January.

1975 "Social Change and the Ideology of Individualism in Psychology and Law." Paper presented at the Western Psychological Association Annual Meeting, April.

SERVICE TO STAFF OR EDITORIAL BOARDS OF FOUNDATIONS, SCHOLARLY JOURNALS OR PRESSES

2018-present: Editorial Consultant, PLoS ONE.

2016-present Editorial Consultant, Translational Issues in Psychological Science.

2016-present Editorial Consultant, International Journal of Law and Psychiatry.

2016-present Editorial Consultant, Justice Quarterly.

2015-present Editorial Consultant, Criminal Justice Review.

2015-present Editorial Consultant, American Journal of Criminal Justice.

2015-present Editorial Consultant, American Journal of Psychology.

2015-present Editorial Consultant, Criminal Justice Policy Review.

2014-2018 Editorial Board Member, Law and Social Inquiry.

2013-present Editorial Consultant, Criminal Justice and Behavior.

2012-present: Editorial Consultant, American Sociological Review.

2012-present: Editorial Consultant, Criminology.

2011-present	Editorial Consultant, Social Psychological and Personality Science.
2008-present	Editorial Consultant, New England Journal of Medicine.
2007-present	Editorial Board Member, Correctional Mental Health Reporter.
2007-present	Editorial Consultant, Journal of Offender Rehabilitation.
2004-2016	Editorial Board Member, American Psychology and Law Society Book Series, Oxford University Press.
2000-2003	Reviewer, Society for the Study of Social Issues Grants-in-Aid Program.
2000-present:	Editorial Consultant, Punishment and Society.
2000-2015	Editorial Board Member, ASAP (on-line journal of the Society for the Study of Social Issues)
1997-2004	Editorial Board Member, Psychology, Public Policy, and Law
1997-present	Editorial Consultant, Psychology, Public Policy, and Law
1991	Editorial Consultant, Brooks/Cole Publishing
1989-present	Editorial Consultant, Journal of Personality and Social Psychology
1988-present	Editorial Consultant, American Psychologist
1985	Editorial Consultant, American Bar Foundation Research Journal
1985-2006	Law and Human Behavior, Editorial Board Member
1985	Editorial Consultant, Columbia University Press
1985-present	Editorial Consultant, Law and Social Inquiry
1980-present	Reviewer, National Science Foundation
1997	Reviewer, National Institutes of Mental Health
1980-present	Editorial Consultant, Law and Society Review
1979-present	Editorial Consultant, Law and Human Behavior

1997-present Editorial Consultant, Legal and Criminological Psychology

GOVERNMENTAL, LEGAL AND CRIMINAL JUSTICE CONSULTING

Training Consultant, Palo Alto Police Department, 1973-1974.

Evaluation Consultant, San Mateo County Sheriff's Department, 1974.

Design and Training Consultant to Napa County Board of Supervisors, County Sheriff's Department (county jail), 1974.

Training Consultation, California Department of Corrections, 1974.

Consultant to California Legislature Select Committee in Criminal Justice, 1974, 1980-1981 (effects of prison conditions, evaluation of proposed prison legislation).

Reviewer, National Science Foundation (Law and Social Science, Research Applied to National Needs Programs), 1978-present.

Consultant, Santa Clara County Board of Supervisors, 1980 (effects of jail overcrowding, evaluation of county criminal justice policy).

Consultant to Packard Foundation, 1981 (evaluation of inmate counseling and guard training programs at San Quentin and Soledad prisons).

Member, San Francisco Foundation Criminal Justice Task Force, 1980-1982 (corrections expert).

Consultant to NAACP Legal Defense Fund, 1982- present (expert witness, case evaluation, attorney training).

Faculty, National Judicial College, 1980-1983.

Consultant to Public Advocates, Inc., 1983-1986 (public interest litigation).

Consultant to California Child, Youth, Family Coalition, 1981-82 (evaluation of proposed juvenile justice legislation).

Consultant to California Senate Office of Research, 1982 (evaluation of causes

and consequences of overcrowding in California Youth Authority facilities).

Consultant, New Mexico State Public Defender, 1980-1983 (investigation of causes of February, 1980 prison riot).

Consultant, California State Supreme Court, 1983 (evaluation of county jail conditions).

Member, California State Bar Committee on Standards in Prisons and Jails, 1983.

Consultant, California Legislature Joint Committee on Prison Construction and Operations, 1985.

Consultant, United States Bureau of Prisons and United States Department of the Interior (Prison History, Conditions of Confinement Exhibition, Alcatraz Island), 1989-1991.

Consultant to United States Department of Justice, 1980-1990 (evaluation of institutional conditions).

Consultant to California Judicial Council (judicial training programs), 2000.

Consultant to American Bar Association/American Association for Advancement of Science Task Force on Forensic Standards for Scientific Evidence, 2000.

Invited Participant, White House Forum on the Uses of Science and Technology to Improve Crime and Prison Policy, 2000.

Member, Joint Legislative/California Department of Corrections Task Force on Violence, 2001.

Consultant, United States Department of Health & Human Services/Urban Institute, "Effects of Incarceration on Children, Families, and Low-Income Communities" Project, 2002.

Detention Consultant, United States Commission on International Religious Freedom (USCIRF). Evaluation of Immigration and Naturalization Service Detention Facilities, July, 2004-2005.

Consultant, International Committee of the Red Cross, Geneva, Switzerland, Consultant on international conditions of confinement.

Member, Institutional Research External Review Panel, California Department of Corrections, November, 2004-2008.

Consultant, United States Department of Health & Human Services on programs

designed to enhance post-prison success and community reintegration, 2006.

Consultant/Witness, U.S. House of Representatives, Judiciary Committee, Evaluation of legislative and budgetary proposals concerning the detention of undocumented persons, February-March, 2005.

Invited Expert Witness to National Commission on Safety and Abuse in America's Prisons (Nicholas Katzenbach, Chair); Newark, New Jersey, July 19-20, 2005.

Testimony to the United States Senate, Judiciary Subcommittee on the Constitution, Civil Rights, and Property Rights (Senators Brownback and Feingold, co-chairs), Hearing on "An Examination of the Death Penalty in the United States," February 7, 2006.

National Council of Crime and Delinquency "Sentencing and Correctional Policy Task Force," member providing written policy recommendations to the California legislature concerning overcrowding crisis in the California Department of Corrections and Rehabilitation.

Trainer/Instructor, Federal Bureau of Prisons and United States Department of Justice, "Correctional Excellence" Program, providing instruction concerning conditions of confinement and psychological stresses of living and working in correctional environments to mid-level management corrections professionals, May, 2004-2008.

Invited Expert Witness, California Commission on the Fair Administration of Justice, Public Hearing, Santa Clara University, March 28, 2008.

Invited Participant, Department of Homeland Security, Mental Health Effects of Detention and Isolation, 2010.

Invited Witness, Before the California Assembly Committee on Public Safety, August 23, 2011.

Consultant, "Reforming the Criminal Justice System in the United States" Joint Working Group with Senator James Webb and Congressional Staffs, 2011 Developing National Criminal Justice Commission Legislation.

Invited Participant, United Nations, Forum with United Nations Special Rapporteur on Torture Concerning the Overuse of Solitary Confinement, New York, October, 2011.

Invited Witness, Before United States Senate Judiciary Subcommittee on the Constitution, Civil Rights, and Human Rights Hearing on Solitary Confinement, June 19, 2012.

Member, National Academy of Sciences Committee to Study the Causes and Consequences of the High Rate of Incarceration in the United States, 2012-2014.

Member, National Academy of Sciences Briefing Group, briefed media and public officials at Pew Research Center, Congressional staff, and White House staff concerning policy implications of The Growth of Incarceration in the United States: Exploring the Causes and Consequences (2014), April 30-May 1.

Consultant to United States Department of Justice and White House Domestic Policy Council on formulation of federal policy concerning use of segregation confinement, 2015.

PRISON AND JAIL CONDITIONS EVALUATIONS

Hoptowit v. Ray [United States District Court, Eastern District of Washington, 1980; 682 F.2d 1237 (9th Cir. 1982)]. Evaluation of psychological effects of conditions of confinement at Washington State Penitentiary at Walla Walla for United States Department of Justice.

Wilson v. Brown (Marin County Superior Court; September, 1982, Justice Burke). Evaluation of effects of overcrowding on San Quentin mainline inmates.

Thompson v. Enomoto (United States District Court, Northern District of California, Judge Stanley Weigel, 1982 and continuing). Evaluation of conditions of confinement on Condemned Row, San Quentin Prison.

Toussaint v. McCarthy [United States District Court, Northern District of California, Judge Stanley Weigel, 553 F. Supp. 1365 (1983); 722 F. 2d 1490 (9th Cir. 1984) 711 F. Supp. 536 (1989)]. Evaluation of psychological effects of conditions of confinement in lockup units at DVI, Folsom, San Quentin, and Soledad.

In re Priest (Proceeding by special appointment of the California Supreme Court, Judge Spurgeon Avakian, 1983). Evaluation of conditions of confinement in Lake County Jail.

Ruiz v. Estelle [United States District Court, Southern District of Texas, Judge William Justice, 503 F. Supp. 1265 (1980)]. Evaluation of effects of overcrowding in the Texas prison system, 1983-1985.

In re Atascadero State Hospital (Civil Rights of Institutionalized Persons Act of 1980 action). Evaluation of conditions of confinement and nature of patient care at ASH for United States Department of Justice, 1983-1984.

In re Rock (Monterey County Superior Court 1984). Appointed to evaluate conditions of confinement in Soledad State Prison in Soledad, California.

In re Mackey (Sacramento County Superior Court, 1985). Appointed to evaluate conditions of confinement at Folsom State Prison mainline housing units.

Bruscino v. Carlson (United States District Court, Southern District of Illinois 1984 1985). Evaluation of conditions of confinement at the United States Penitentiary at Marion, Illinois [654 F. Supp. 609 (1987); 854 F.2d 162 (7th Cir. 1988)].

Dohner v. McCarthy [United States District Court, Central District of California, 1984-1985; 636 F. Supp. 408 (1985)]. Evaluation of conditions of confinement at California Men's Colony, San Luis Obispo.

Invited Testimony before Joint Legislative Committee on Prison Construction and Operations hearings on the causes and consequences of violence at Folsom Prison, June, 1985.

Stewart v. Gates [United States District Court, 1987]. Evaluation of conditions of confinement in psychiatric and medical units in Orange County Main Jail, Santa Ana, California.

Duran v. Anaya (United States District Court, 1987-1988). Evaluation of conditions of confinement in the Penitentiary of New Mexico, Santa Fe, New Mexico [Duran v. Anaya, No. 77-721 (D. N.M. July 17, 1980); Duran v. King, No. 77-721 (D. N.M. March 15, 1984)].

Gates v. Deukmejian (United States District Court, Eastern District of California, 1989). Evaluation of conditions of confinement at California Medical Facility, Vacaville, California.

Kozeak v. McCarthy (San Bernardino Superior Court, 1990). Evaluation of conditions of confinement at California Institution for Women, Frontera, California.

Coleman v. Gomez (United States District Court, Eastern District of California, 1992-3; Magistrate Moulds, Chief Judge Lawrence Karlton, 912 F. Supp. 1282 (1995). Evaluation of study of quality of mental health care in California prison system, special mental health needs at Pelican Bay State Prison.

Madrid v. Gomez (United States District Court, Northern District of California, 1993, District Judge Thelton Henderson, 889 F. Supp. 1146 (N.D. Cal. 1995). Evaluation of conditions of confinement and psychological consequences of

isolation in Security Housing Unit at Pelican Bay State Prison, Crescent City, California.

Clark v. Wilson, (United States District Court, Northern District of California, 1998, District Judge Fern Smith, No. C-96-1486 FMS), evaluation of screening procedures to identify and treatment of developmentally disabled prisoners in California Department of Corrections.

Turay v. Seling [United States District Court, Western District of Washington (1998)]. Evaluation of Conditions of Confinement-Related Issues in Special Commitment Center at McNeil Island Correctional Center.

In re: The Commitment of Durden, Jackson, Leach, & Wilson. [Circuit Court, Palm Beach County, Florida (1999).] Evaluation of Conditions of Confinement in Martin Treatment Facility.

Ruiz v. Johnson [United States District Court, Southern District of Texas, District Judge William Wayne Justice, 37 F. Supp. 2d 855 (SD Texas 1999)]. Evaluation of current conditions of confinement, especially in security housing or "high security" units.

Osterback v. Moore (United States District Court, Southern District of Florida (97-2806-CIV-MORENO) (2001) [see, Osterback v. Moore, 531 U.S. 1172 (2001)]. Evaluation of Close Management Units and Conditions in the Florida Department of Corrections.

Valdivia v. Davis (United States District Court, Eastern District of California, 2002). Evaluation of due process protections afforded mentally ill and developmentally disabled parolees in parole revocation process.

Ayers v. Perry (United States District Court, New Mexico, 2003). Evaluation of conditions of confinement and mental health services in New Mexico Department of Corrections "special controls facilities."

Disability Law Center v. Massachusetts Department of Corrections (Federal District Court, Massachusetts, 2007). Evaluation of conditions of confinement and treatment of mentally ill prisoners in disciplinary lockup and segregation units.

Plata/Coleman v. Schwarzenegger (Ninth Circuit Court of Appeals, Three-Judge Panel, 2008). Evaluation of conditions of confinement, effects of overcrowding on provision of medical and mental health care in California Department of Corrections and Rehabilitation. [See Brown v. Plata, 563 U.S. 493 (2011).]

Ashker v. Brown (United States District Court, Northern District of California, 2013-2015). Evaluation of the effect of long-term isolated confinement in Pelican Bay State Prison Security Housing Unit.

Parsons v. Ryan (United States District Court, District of Arizona, 2012-14). Evaluation of conditions of segregated confinement for mentally ill and non-mentally ill prisoners in statewide correctional facilities. [See Parsons v. Ryan, 754 F.3d 657 (9th Cir. 2014)].

Coleman v. Brown (United States District Court, District of California, 2013-2014). Evaluation of treatment of mentally ill prisoners housed in administrative segregation in California prisons. [See Coleman v. Brown, 28 F.Supp.3d 1068 (2014).]

Braggs v. Dunn (United States District Court, Middle District of Alabama, 2015-2017). Evaluation of mental health care delivery system, overcrowded conditions of confinement, and use of segregation in statewide prison system. [See Braggs v. Dunn, 257 F. Supp. 3d 1171 (M.D. Ala. 2017).]

APPENDIX B

Appendix B

Professor Craig Haney

Statement of Compensation: My rate of compensation is $350/hour for out-of-court legal consulting, $500/hour for deposition and trial testimony.

Trial and Deposition Testimony Over the Past Four Years
(2018 through present)

2018 Braggs v. Dunn (federal), hearing testimony.

People v. Bracamontes, trial testimony.

Gumm v. Ward, (federal), deposition testimony. [Georgia isolation]

2019 Francis v. Her Majesty the Queen in Right of Ontario (Canada), deposition testimony.

Sabata v. Nebraska Department of Correctional Services (federal), deposition testimony.

Henry Davis et al. v. John Baldwin et al. (federal), deposition testimony.

2020 U.S. v. Alejandro Toledo (federal), hearing testimony.

Raymond Tarlton, et al. v. Kenneth Sealey, et al. (federal), deposition testimony. [NC Henry McCollum, Leon Brown]

Novoa v. GEO (federal), deposition testimony.

In re Lisle (federal), hearing testimony.

2021 Raymond Tarlton, et al. v. Kenneth Sealey, et al. (federal), trial testimony. [NC Henry McCollum, Leon Brown]

Tellis v. LeBlanc (federal), deposition testimony.

Harvard v. Inch (federal), deposition testimony.

Parsons v. Ryan (federal), hearing testimony.

2022 Tellis v. LeBlanc (federal, trial testimony)

G.H. et al. v. Department of Juvenile Justice (federal), deposition testimony.

APPENDIX C

Materials Index

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- Cornelison Aff.
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APPENDIX D

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THE SCIENCE OF SOLITARY: EXPANDING THE HARMFULNESS NARRATIVE

Craig Haney

ABSTRACT—The harmful effects of solitary confinement have been established in a variety of direct observations and empirical studies that date back to the nineteenth century, conducted in many different countries by researchers with diverse disciplinary backgrounds. This Essay argues that these effects should be situated and understood in the context of a much larger scientific literature that documents the adverse and sometimes life-threatening psychological and physical consequences of social isolation, social exclusion, loneliness, and the deprivation of caring human touch as they occur in free society. These dangerous conditions are the hallmarks of solitary confinement. Yet they are imposed on prisoners in far more toxic forms that exacerbate their harmful effects, are incurred in addition to the adverse consequences of incarceration per se, and operate in ways that increase their long-term negative impact. This broader empirical and theoretically grounded scientific perspective expands the harmfulness narrative about solitary confinement and argues in favor of much greater restrictions on its use.

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INTRODUCTION

Knowledge about the psychological and physical harms inflicted by solitary confinement has evolved considerably over the last several decades.[1] Ironically, growing awareness of its serious adverse effects coincided with the increasingly widespread use of the practice during the era of mass incarceration that began in the 1970s.[2] This recent several-decade period of prison growth also represents the "modern era" of solitary confinement in corrections, in contrast to its widespread—and, for a time, nearly universal—use in the nineteenth century. Over a century ago, the terrible effects that solitary confinement had on prisoners led to condemnation of the practice

[1] "Solitary confinement" is a term of art in corrections, one whose longstanding negative connotations have spawned a number of seemingly less pejorative alternative descriptors across different jurisdictions (including "administrative segregation," "close management," "security housing," and what appears to be the current favorite, "restrictive housing"). In this Essay, I will use the original term to encompass all of these variations. From a psychological perspective, "solitary confinement" is defined less by the purpose for which it is imposed, or the exact amount of time during which prisoners are confined to their cells, than by the degree to which they are deprived of normal, direct, meaningful social contact and denied access to positive environmental stimulation and activity. Thus, even a regime incorporating a considerable amount of out-of-cell time during which a prisoner is simultaneously prohibited from engaging in normal, direct, meaningful social contact and positive stimulation or programming would still constitute a painful and potentially damaging form of solitary confinement. Especially in a prison context, the terms "normal" and "direct" mean that the contact itself is not mediated or obstructed by bars, restraints, security glass or screens, or the like. "Meaningful" refers to voluntary contact that permits purposeful activities of common interest or consequence that takes place in the course of genuine social interaction and engagement with others.

[2] For several different perspectives on this pivotal era in the United States' criminal justice history and its consequences for prisoners and the larger society from which they were drawn, see MICHELLE ALEXANDER, THE NEW JIM CROW: MASS INCARCERATION IN THE AGE OF COLORBLINDNESS (rev. ed. 2012); MARIEKE LIEM, AFTER LIFE IMPRISONMENT: REENTRY IN THE ERA OF MASS INCARCERATION (2016); NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., THE GROWTH OF INCARCERATION IN THE UNITED STATES: EXPLORING CAUSES AND CONSEQUENCES (Jeremy Travis, Bruce Western & F. Stevens Redburn eds., 2014).

and a long period of relative disuse. Thus, even by the mid-nineteenth century, many state prison systems had concluded that the once widely used harsh form of complete isolation was "impracticable, inhuman, and intolerably expensive."[3]

Of course, solitary confinement—"the hole"—was never completely eliminated. Most prisons and jails retained special cells in which prisoners could be kept for relatively brief periods of time to separate them from others for safety reasons, or as a form of punishment for disciplinary infractions. For example, in Gresham Sykes's classic account of a typical maximum-security prison in the United States in the mid-1950s, he reported that solitary confinement was used sparingly "for those prisoners who are being punished for infractions of the prison rules."[4] Moreover, even before the era of mass incarceration produced widespread overcrowding and countenanced harsh treatment of prisoners more broadly, some especially troubled and cruel prisons did utilize solitary confinement as a form of severe punishment. For example, in the mid-1950s, Mississippi's Parchman prison farm built a special "Maximum Security Unit" (or MSU), described as a "low-slung brick-and-concrete bunker in the middle of a former cotton field, surrounded by four guard towers, two razor-wire fences, and a series of electric gates" that housed the state's new gas chamber and a solitary confinement unit.[5] The latter was used "for the isolation and punishment of disruptive convicts" that one prisoner recalled as a place "where they just beat the living crap out of you. . . . Nobody left there without bumps and busted bones."[6]

However, the widespread use of longer-term solitary confinement returned with a vengeance in the 1970s. Changes brought about in the recent modern era of the use of solitary confinement saw significant increases in the numbers of persons who were subjected to it and the lengths of time they were kept there. Not only have prisoners been placed in solitary confinement for months and years rather than days or weeks, but increasing numbers of prisoners have been subjected to this form of harsh treatment.[7] Its renewed

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[3] *Adoption of the Separate System in the States of Central Europe,—and Its Prospects Else-Where*, 12 PA. J. PRISON DISCIPLINE & PHILANTHROPY 79 (1857).

[4] GRESHAM M. SYKES, THE SOCIETY OF CAPTIVES: A STUDY OF A MAXIMUM SECURITY PRISON 7 (First Princeton Classic ed. 2007) (1958). As an indication of exactly how sparingly even short-term solitary confinement was employed, the offense of "possession of home-made knife, metal, and emery paper" resulted in "5 days in segregation with restricted diet." *Id.* at 43.

[5] DAVID M. OSHINSKY, "WORSE THAN SLAVERY": PARCHMAN FARM AND THE ORDEAL OF JIM CROW JUSTICE 228 (1996).

[6] *Id.* at 229.

[7] *See, e.g.*, *infra* note 8; *see also* John J. Gibbons & Nicholas de B. Katzenbach, *Confronting Confinement: A Report of the Commission on Safety and Abuse in America's Prisons*, 22 WASH. U. J.L.

popularity continued until recently, despite accumulating evidence that solitary confinement fails to achieve the penological purposes for which it is ostensibly used, is far more expensive to implement and operate than other correctional regimes, and produces negative psychological and physical consequences that raise serious questions about its constitutionality and its status as a form of torture.[8]

My own involvement in prison research and litigation examining the psychological effects of isolation parallels the recent resurgence of this condemnable punishment in the late 1970s and early 1980s. The early challenges to solitary confinement in which I was involved focused on what were sometimes termed "lock-up" units in different parts of the country. These cases resulted in narrowly drawn court opinions concerned largely with the degraded environmental conditions inside these facilities and whether prisoners were deprived of the "basic necessities of life," interpreted to mean "adequate food, clothing, shelter, sanitation, medical care, and personal safety."[9] The era of mass incarceration was already underway when these challenges were brought, which meant that overcrowded prison systems throughout the country were struggling to maintain order in the face of an unprecedented influx of prisoners. In an attempt to meet this and other demands, prison administrators often adopted an exigent strategy: to segregate prisoners whom they viewed as disruptive or problematic. The

& POL'Y 385, 461–62 (2006) (reporting that between 1995 and 2000 the overall number of prisoners in segregation or solitary confinement increased 40%, and the number in "disciplinary segregation" increased 68%); Ryan T. Sakoda & Jessica T. Simes, *Solitary Confinement and the U.S Prison Boom*, CRIM. JUST. POL'Y REV. (Dec. 29, 2019), https://journals.sagepub.com/doi/full/10.1177/0887403419895315 [https://perma.cc/QY8H-2B4E] (reporting the increasing use and especially the increasing lengths of stay in solitary confinement units in the Kansas prison system that roughly coincided with the era of mass incarceration in the United States).

[8] See the studies and statements reviewed and summarized in *Consensus Statement of the Santa Cruz Summit on Solitary Confinement and Health*, 115 NW. U. L. REV. 335 (2020) [hereinafter *Santa Cruz Summit*]; Craig Haney & Shirin Bakhshay, *Contexts of Ill-Treatment: The Relationship of Captivity and Prison Confinement to Cruel, Inhuman, or Degrading Treatment and Torture*, *in* TORTURE AND ITS DEFINITION IN INTERNATIONAL LAW: AN INTERDISCIPLINARY APPROACH 139 (Metin Başoğlu ed., 2017); Craig Haney, *Restricting the Use of Solitary Confinement*, 1 ANN. REV. CRIMINOLOGY 285 (2018) [hereinafter Haney, *Restricting Solitary Confinement*]; *see also* Federica Coppola, *The Brain in Solitude: An (Other) Eighth Amendment Challenge to Solitary Confinement*, 6 J.L. & BIOSCIENCES 1 (2019); Jules Lobel, *Prolonged Solitary Confinement and the Constitution*, 11 U. PA. J. CONST. L. 115 (2008). Relatedly, philosopher Kimberley Brownlee has argued that social deprivation, which she defined as "a persisting lack of minimally adequate opportunities for decent or supportive human contact including interpersonal interaction, associative inclusion, and interdependent care," represents a deprivation of a basic human right. Kimberley Brownlee, *A Human Right Against Social Deprivation*, 63 PHIL. Q. 199, 199 (2013).

[9] Hoptowit v. Ray, 682 F.2d 1237, 1258 (9th Cir. 1982) (opining on conditions of confinement in the isolation, segregation, and protective custody units in Washington State Penitentiary).

decisions to do so were often reached on vague, unspecified, and questionable bases. Some appeared to stem from racially tinged fears about prisoners of color becoming politically militant and better organized, including those accused of "practic[ing] Black Pantherism."[10] As Heather Thompson's book about the tragic 1971 Attica prisoner rebellion notes, by the start of the 1970s several New York prisons operated dreaded solitary confinement units that were used to house prisoners whom correctional officials perceived to be political activists, many of whom were prisoners of color.[11] Her compelling account is also replete with examples of the role that law enforcement and prison officers' racial fears of and animosities toward

[10] This was one of the specific justifications for the continued retention of members of the "Angola 3" in a form of solitary confinement inside Louisiana's Angola Prison Farm for approximately four decades. *See* ALBERT WOODFOX WITH LESLIE GEORGE, SOLITARY 192 (2019). The extremely long-term, indefinite solitary confinement of prisoners—lasting a decade or more—was often reserved for prisoners perceived to be members of prison gangs, a designation that frequently had racial or ethnic implications. *See, e.g.*, Keramet A. Reiter, *Parole, Snitch, or Die: California's Supermax Prisons and Prisoners, 1997-2007*, 14 PUNISHMENT & SOC'Y 530 (2012); Keramet Reiter, Joseph Ventura, David Lovell, Dallas Augustine, Melissa Barragan, Thomas Blair, Kelsie Chesnut, Pasha Dashtgard, Gabriela Gonzalez, Natalie Pifer & Justin Strong, *Psychological Distress in Solitary Confinement: Symptoms, Severity, and Prevalence in the United States, 2017-2018*, 110 AM. J. PUB. HEALTH SUPPLEMENT S56, S58 (2020); *see also* Scott N. Tachiki, *Indeterminate Sentences in Supermax Prisons Based upon Alleged Gang Affiliations: A Reexamination of Procedural Protection and a Proposal for Greater Procedural Requirements*, 83 CALIF. L. REV. 1115, 1117–49 (1995). Comprehensive surveys and individual statewide investigations have documented the overrepresentation of prisoners of color in solitary confinement units. For example, a self-report survey of a very large sample of U.S. correctional jurisdictions conducted from 2017 to 2018 by the Association of State Correctional Administrators (ASCA) and the Yale Law School's Liman Center for Public Interest Law found that among the thirty-three jurisdictions that provided racial breakdowns, there were modest racial disproportions in solitary confinement overall—including an especially large overrepresentation of African-American women in solitary confinement compared to their white counterparts—and wide variations between jurisdictions. THE ASS'N OF STATE CORR. ADM'RS & THE LIMAN CTR. FOR PUB. INTEREST LAW AT YALE LAW SCHOOL, REFORMING RESTRICTIVE HOUSING: THE 2018 ASCA-LIMAN NATIONWIDE SURVEY OF TIME-IN-CELL (2018), https://law.yale.edu/centers-workshops/arthur-liman-center-public-interest-law/liman-center-publications [https://perma.cc/68A2-KZXH]; *see also* Margo Schlanger, *Prison Segregation: Symposium Introduction and Preliminary Data on Racial Disparities*, 18 MICH. J. RACE & L. 241 (2013) (reporting racial disproportions in the use of solitary confinement in several different state prison systems); Sakoda & Simes, *supra* note 7 (reporting racial disproportions in the use of solitary confinement in the Kansas prison system, especially in the durations of time spent in solitary confinement by young African-American men); Michael Schwirtz, Michael Winerip & Robert Gebeloff, *The Scourge of Racial Bias in New York State's Prisons*, N.Y. TIMES (Dec. 3, 2016) https://www.nytimes.com/2016/12/03/nyregion/new-york-state-prisons-inmates-racial-bias.html?_r=0 [https://perma.cc/529Y-MJDX] (reporting that African-American prisoners were 65% more likely to be sent to solitary confinement than whites). *See generally* Andrea C. Armstrong, *Race, Prison Discipline, and the Law*, 5 U.C. IRVINE L. REV. 759 (2015).

[11] HEATHER ANN THOMPSON, BLOOD IN THE WATER: THE ATTICA PRISON UPRISING OF 1971 AND ITS LEGACY (2016).

African-American prisoners played in fueling their overreactions before, during, and after their violent, deadly retaking of the prison.

It is important to note that the era of mass incarceration and increased use of solitary confinement followed on the heels of the civil rights and Black Power movements of the 1960s and 1970s. Both are now understood as having "empowered marginalized groups to engage in protest that demanded a radical redistribution of political, social and economic power."[12] In the larger society, and certainly in U.S. prisons, the attempted power redistribution was met with forceful resistance that was designed to suppress and eliminate it. The fact that "the American penal system [was] a locus of black power activism"[13] was arguably one factor that contributed to the rise of long-term solitary confinement. In my experience, a disproportionate number of the prisoners who were placed in solitary confinement, and especially those who were subjected to extremely long-term solitary confinement—stays measured in years or even decades—were prisoners of color.[14] The often unverified perception that their radical political views—as much or more than their specific actions—posed a "threat to the safety and security of the institution" served as the premise for their lengthy, often indefinite isolation.

In any event, prisoners began to be crammed inside makeshift lockup units for expediency more than anything else,[15] and the nineteenth century's lessons about the harmfulness of solitary confinement were either forgotten

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[12] Zoe Colley, *War Without Terms: George Jackson, Black Power and the American Radical Prison Rights Movement, 1941–1971*, 101 HISTORY 265, 266–67 (2016). See also historian Joe Street's speculation that the postprison demise of former Black Panther Party leader Huey Newton was caused not only by unrelenting police harassment but also the "soul break[ing]" effects of his experiences in solitary confinement. Joe Street, *The Shadow of the Soul Breaker: Solitary Confinement, Cocaine, and the Decline of Huey P. Newton*, 84 PAC. HIST. REV. 333, 336–37, 345 (2015).

[13] Colley, *supra* note 12, at 267; *see also* DAN BERGER, CAPTIVE NATION: BLACK PRISON ORGANIZING IN THE CIVIL RIGHTS ERA (2014); DONALD F. TIBBS, FROM BLACK POWER TO PRISON POWER: THE MAKING OF JONES V. NORTH CAROLINA PRISONERS' LABOR UNION (2012); Angela A. Allen-Bell, *Perception Profiling & Prolonged Solitary Confinement Viewed Through the Lens of the Angola 3 Case: When Prison Officials Become Judges, Judges Become Visually Challenged, and Justice Becomes Legally Blind*, 39 HASTINGS CONST. L.Q. 763, 766 (2012) (discussing the legal implications of the Angola 3 case and the prolonged solitary confinement to which they were subjected).

[14] *See supra* note 10; *see also* Johnson v. Wetzel, 209 F. Supp. 3d 766 (M.D. Pa. 2016) (ordering the release from solitary into general population of an African-American prisoner who, despite suffering ongoing psychological harm, was held in solitary confinement for thirty-six years in the absence of credible evidence that he posed a threat to institutional security).

[15] *See, e.g.*, Toussaint v. Rushen, 553 F. Supp. 1365, 1374–75 (N.D. Cal. 1983) (opining on the fact that prisoners were being "arbitrarily placed and retained in segregated housing" as a way "to simply warehouse" them, including "for reasons other than their conduct").

or ignored in the face of what were perceived as more pressing concerns.[16] The devolution of the federal penitentiary in Marion, Illinois is an instructive example. Marion was opened in 1963 and was intended to replace the high-security federal prison at Alcatraz, which closed the same year.[17] Although it was designated as the highest security level prison in the federal system, as Stephen Richards noted, "In effect, Marion was a small version of a 'mainline' penitentiary."[18] A "control unit" with a limited number of cells was constructed within Marion penitentiary in 1973, and was operated as a dedicated solitary confinement unit in which prisoners were intended to be housed in nearly complete isolation for extremely long periods of time. However, largely in response to the lethal violence that occurred within the control unit in October 1983, the entire prison was "locked down" and began to be operated as a long-term lockup prison. Thus, after 1983, Marion was "the first federal prison operated entirely as a high-security isolation supermax."[19]

That same year, psychiatrist Stuart Grassian published an in-depth clinical assessment of a group of prisoners in a solitary confinement unit in a prison in Walpole, Massachusetts. His findings helped to raise awareness about the potentially severe psychiatric consequences of this kind of extreme prison isolation.[20] Increased concern about the issue came at an especially opportune time, as more prison systems in the United States were beginning a return to the long-abandoned practice of solitary confinement. In fact, a number of prison systems reacted to the unprecedented influx of prisoners in the 1970s and 1980s (that included a significant number of mentally ill prisoners whose needs penal institutions were thoroughly ill-equipped to address) by creating what was essentially a new prison form. Sometimes called "supermax" prisons, these facilities were explicitly designed to impose extreme levels of isolation (often made possible by the introduction

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[16] In an often-quoted passage from a late nineteenth-century case, *In re Medley*, 134 U.S. 160, 168 (1890), Justice Samuel Miller summarized the consensus view that the once widespread practice of solitary confinement was "too severe." He noted that "[a] considerable number of the prisoners fell, after even a short confinement, into a semi-fatuous condition, from which it was next to impossible to arouse them, and others became violently insane; others still, committed suicide; while those who stood the ordeal better were not generally reformed, and in most cases did not recover sufficient mental activity to be of any subsequent service to the community." *Id.*

[17] Stephen C. Richards, *USP Marion–The First Federal Supermax*, 88 PRISON J. 6, 9 (2008).

[18] *Id.*

[19] *Id.* at 10, 18; *see also* THE MARION EXPERIMENT: LONG-TERM SOLITARY CONFINEMENT & THE SUPERMAX MOVEMENT (Stephen C. Richards ed., 2015). A "high tech" federal supermax, ADX, was opened in 1994, and Marion was eventually converted into a medium-security prison in 2007.

[20] Stuart Grassian, *Psychopathological Effects of Solitary Confinement*, 140 AM. J. PSYCHIATRY 1450, 1450–54 (1983).

of a new generation of correctional technology) and to do so on a long-term basis.[21] As Chase Riveland observed in the late 1990s, in addition to an expedient attempt to manage such an unexpectedly large numbers of prisoners, the proliferation of supermax prisons was also in part motivated by the fact that they were seen as "politically and publicly attractive" facilities that, at the time, had "become political symbols of how 'tough' a jurisdiction ha[d] become."[22]

My first experience inside a truly modern supermax prison occurred in 1990, when I toured the recently opened Security Housing Unit (SHU) at the Pelican Bay State Prison in California. At the time, Pelican Bay's reputation as one of the nation's first and most draconian supermax prisons was just being established. By then, I had been inside many makeshift solitary confinement units where prison systems were beginning to isolate increasingly large numbers of prisoners for what would eventually amount to unprecedented amounts of time. I had learned that many prisoners in these units struggled to adapt to and survive the degraded conditions, enforced idleness, and extreme social deprivation to which they were subjected. However, researchers like myself were just beginning to understand and document the depth and breadth of the suffering.

In contrast to the crowded, noisy, and dirty lockup units I visited in places like San Quentin and Folsom State Prisons, the Penitentiary of New Mexico, and the Washington State Penitentiary, the free-standing SHU at Pelican Bay was stark and frightening for an entirely different reason: it gave no indication that it was a place that housed actual human beings. Although I had been inside many prisons before my first visit to Pelican Bay, I had never seen one like this, resembling a massive storage facility where inanimate objects are housed. The sights and sounds of human activity or evidence that real people lived there—the sorts of things that every prison manifested—were nowhere to be found. Even inside the housing units, or

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[21] CHASE RIVELAND, NAT'L INST. CORR., U.S. DEP'T JUSTICE, SUPERMAX PRISONS: OVERVIEW AND GENERAL CONSIDERATIONS 2 (1999). Riveland correctly noted in 1999 that "[t]here is no universal definition of what supermax facilities are and who should be placed in them." *Id.* at 4. Although there is still no precise definition for what constitutes a "supermax" prison, they are generally identified by: (1) the extent to which the facility itself is devoted to isolating prisoners (i.e., typically a freestanding facility rather than a unit within a prison that otherwise does not utilize isolation); (2) the heightened degree of isolation they impose (primarily because most were explicitly designed to isolate prisoners and tend to be somewhat newer facilities that employ correctional technology in order to more effectively do so); and (3) the reasons or justifications for placing prisoners in solitary confinement, with a disproportionate number of prisoners confined there because of who the prison system perceives them to be, including representing generalized threats to the safety and security of the institution, rather than specific acts for which they are being punished. *See id.* at 4–6.

[22] *Id.* at 5.

"pods," there was an eerie, unsettling quiet, and a reliance more on technological than human forms of control. These conditions led *60 Minutes* correspondent Mike Wallace to exclaim, when he first entered one of the Pelican Bay housing units, that it "looks a little bit like a spaceship or a space station."[23]

In 1992, after the prison had been operating for only a few years, I began a series of court-ordered visits there to interview a large sample of prisoners, selected randomly from the prison roster, to try to determine whether and how they were being affected by the experience. The level of suffering and trauma they reported shocked me and led me to spend the next several decades studying the effects of prison isolation in scores of prisons and correctional systems around the country. When I returned to Pelican Bay some twenty years later, it was a bittersweet reunion with several of the men from my original sample—ones who, tragically, had never left the SHU in the intervening two decades.[24]

The basic harmfulness of solitary confinement is now a largely settled scientific fact. A number of articles published in recent years have comprehensively catalogued a wide range of studies demonstrating the adverse psychological effects and other consequences that befall persons who are subjected to this cruel form of imprisonment.[25] A few outlier studies

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[23] *60 Minutes: Wallace at Pelican Bay* (CBS television broadcast Sept. 12, 1993), https://www.cbs.com/shows/60_minutes/video/c77u_9DB_JMZCukdtURkP9SUu0TFLlK8/from-the-archives-60-minutes-first-pelican-bay-report/ [https://perma.cc/RPS7-YBFB].

[24] As I will describe later in this Essay, I returned to the SHU at Pelican Bay in 2011 to conduct interviews with a representative sample of prisoners who had been confined there on an extremely long-term basis (i.e., ten years or more). *See infra* notes 130–136 and accompanying text. I was also able to separately interview a number of men who had been in the SHU essentially since it had opened in 1989, including several from my original 1992 sample. *See* Craig Haney, *Solitary Confinement, Loneliness, and Psychological Harm* [hereinafter Haney, *Solitary Confinement, Loneliness, and Psychological Harm*], *in* SOLITARY CONFINEMENT: EFFECTS, PRACTICES, AND PATHWAYS TOWARD REFORM 129, 134–35 (Jules Lobel & Peter Scharff Smith eds., 2020).

[25] These many studies have been carefully reviewed in a number of publications. *See, e.g.*, Kristin G. Cloyes, David Lovell, David G. Allen & Lorna A. Rhodes, *Assessment of Psychosocial Impairment in a Supermaximum Security Unit Sample*, 33 CRIM. JUST. & BEHAV. 760 (2006); Stuart Grassian, *Psychiatric Effects of Solitary Confinement*, 22 WASH. U. J.L. & POL'Y 325 (2006); Craig Haney & Mona Lynch, *Regulating Prisons of the Future: A Psychological Analysis of Supermax and Solitary Confinement*, 23 N.Y.U. REV. L. & SOC. CHANGE 477 (1997); Haney, *Restricting Solitary Confinement*, *supra* note 8; Peter Scharff Smith, *The Effects of Solitary Confinement on Prison Inmates: A Brief History and Review of the Literature*, 34 CRIME & JUST. 441 (2006); *see also*, Mimosa Luigi, Laura Dellazizzo, Charles-Édouard Giguère, Marie-Hélène Goulet & Alexandre Dumais, *Shedding Light on "the Hole": A Systematic Review and Meta-Analysis on Adverse Psychological Effects and Mortality Following Solitary Confinement in Correctional Settings*, FRONTIERS IN PSYCHIATRY, Aug. 2020.

that purport to find little or no harm have been largely debunked,[26] and many professional mental health, medical, legal, human rights, and correctional organizations have promulgated strong position statements that urge or require significantly limiting the use of solitary confinement and even prohibiting it entirely for especially vulnerable groups of prisoners.[27] Placement in solitary confinement can have dramatic, even lethal, effects; for example, research continues to show that the highest rates of self-harm and suicide in prison occur in conditions of isolation.[28] However, even those prisoners who survive the experience of solitary confinement often suffer long-lasting physical and psychological damage.[29]

In this Essay, I address several separate but interrelated issues that are often only alluded to in discussions about the nature and effects of solitary confinement. Although sometimes overlooked, they importantly expand the narrative about the harmfulness of this increasingly unjustifiable practice. These issues are critical to make explicit and to directly address, in part to respond to the occasional but persistent claims minimizing the magnitude of the harm inflicted by solitary confinement. A very small number of defenders of solitary confinement continue to advance three specific minimizing arguments, namely that: (1) there is simply not enough evidence to establish the harmfulness of solitary confinement; (2) although the negative effects may be real, their impact is *de minimis*; and (3) whatever effects do occur will dissipate quickly over time, so that persons adversely affected soon regain their prior level of psychological well-being.

However, I argue that these assertions can and should be turned on their heads. Indeed, their *opposite* is actually true. First, we now know that solitary

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[26] *See, e.g.*, Craig Haney, *The Psychological Effects of Solitary Confinement: A Systematic Critique*, 47 CRIME & JUST. 365 (2018) [hereinafter Haney, *Psychological Effects of Solitary Confinement*].

[27] *See, e.g.*, *WMA Statement on Solitary Confinement*, WORLD MED. ASS'N (Nov. 28, 2019), https://www.wma.net/policies-post/wma-statement-on-solitary-confinement/ [https://perma.cc/S8TW-8X2Y] (prohibiting the use of solitary confinement with children, pregnant women, women less than six months postpartum, breastfeeding mothers and those with infants, prisoners with "mental health problems," and those with "physical disabilities or other medical conditions where their conditions would be exacerbated by such measures").

[28] *See, e.g.*, Louis Favril, Rongqin Yu, Keith Hawton & Seena Fazel, *Risk Factors for Self-Harm in Prison: A Systematic Review and Meta-Analysis*, 7 LANCET PSYCHIATRY 682 (2020); Fatos Kaba, Andrea Lewis, Sarah Glowa-Kollisch, James Hadler, David Lee, Howard Alper, Daniel Selling, Ross MacDonald, Angela Solimo, Amanda Parsons & Homer Venters, *Solitary Confinement and Risk of Self-Harm Among Jail Inmates*, 104 AM. J. PUB. HEALTH 442 (2014); Paolo Roma, Maurizio Pompili, David Lester, Paolo Girardi & Stefano Ferracuti, *Incremental Conditions of Isolation as a Predictor of Suicide in Prisoners*, 233 FORENSIC SCI. INT'L e1, e1 (2013). Prisoners appear to be at greatest risk of suicide early in their stay in solitary confinement, but they remain at risk throughout. *See* Bruce B. Way, Donald A. Sawyer, Sharen Barboza & Robin Nash, *Inmate Suicide and Time Spent in Special Disciplinary Housing in New York State Prison*, 58 PSYCHIATRIC SERVS. 558, 559 (2007).

[29] *See infra* notes 142–153 and accompanying text.

confinement research represents a subset of a much larger scientific literature where the adverse consequences of analogous experiences have been *extensively* documented and are beyond question. Second, the effects of solitary confinement are hardly *de minimis*, especially because they occur *in addition* to the baseline and very substantial harms of imprisonment per se. And finally, the harmful effects can persist long after a person leaves solitary confinement. In fact, sometimes the most disabling consequences manifest themselves most clearly and strongly upon release.

I. THE EFFECTS OF SOLITARY CONFINEMENT ARE SITUATED WITHIN A BROAD AND WELL-ESTABLISHED SCIENTIFIC LITERATURE

It is commonplace and entirely appropriate in scientific circles to repeat the mantra that "more research is needed." In so many words, most empirical articles end with a form of this admonition. It is always a defensible and sometimes necessary refrain. There is really no research topic on which additional data would not be at least marginally useful and some for which, given the relatively undeveloped state of our knowledge, it would be essential. However, that claim that we simply do not have enough data to conclude that solitary confinement is harmful to prisoners is sometimes employed for a different reason—to justify its continued use. Yet the assertion is incorrect and inapt. As I noted earlier, we now have more than sufficient data to conclude that solitary confinement is a harmful practice. The findings that support this conclusion are robust and derive from an array of studies conducted from the nineteenth century onwards by researchers with different kinds of scientific training, employing a variety of methods, and operating in several different continents. Thus, statements to the effect that "existing literature documenting the effects of segregation . . . is inconclusive" are made by authors who are either unaware of the full extent of the research on solitary confinement and what it shows or who, for some reason, fail to consider the larger body of scientific knowledge of which it is a part.[30]

However, beyond ensuring that the *entire* database that bears directly on the issue is taken into account, it is also important to understand that although solitary confinement is often discussed as if it were *sui generis*—a distinct, unique phenomenon that only occurs and therefore can only be studied and assessed in prison settings—it has clear analogues in the free world. These civilian analogues are critical for prison scholars and researchers as well as litigators, correctional policymakers, and legal

[30] Carl B. Clements, Richard Althouse, Robert K. Ax, Phillip R. Magaletta, Thomas J. Fagan & J. Stephen Wormith, *Systemic Issues and Correctional Outcomes: Expanding the Scope of Correctional Psychology*, 34 CRIM. JUST. & BEHAV. 919, 925 (2007).

decision-makers to consistently acknowledge, advert to, and rely on. They serve as the broad and deep scientific underpinnings of research that demonstrates the harmful effects of solitary confinement per se. Thus, knowledge about solitary confinement does not exist in an empirical or theoretical vacuum. Instead, what we know about the negative psychological effects of prison isolation is situated in a much larger scientific literature about the harmfulness of social isolation, loneliness, and social exclusion in society more generally. There is now a wealth of scientific knowledge about the adverse consequences of these negative experiences as they occur in contexts and settings outside prison.

This broader literature about the deleterious impact of isolation is the scientific framework through which the effects of solitary confinement should be understood and interpreted, in part because prison research is notoriously difficult to conduct and even more difficult to conduct properly. Prisons are the quintessential closed institutions in our society to which meaningful access is especially challenging, if not often impossible, to arrange.[31] Moreover, even those intrepid researchers who do obtain access to prisons typically lack control over where and how prisoners are housed and for how long, as these decisions are governed by correctional staff rather than scientific contingencies.[32] Solitary confinement units are especially closed off to outsiders and dominated by nonnegotiable correctional mandates and practices. Absent these constraints in the world outside prison, researchers from a wide variety of disciplines have been able to conduct a vast number of scientific studies on the effects of social isolation and social exclusion and the related experience of loneliness. This extensive literature forms the much larger empirical database and theoretical framework in which the results of research on solitary confinement in prison are situated.

Current scientific knowledge on the effects of social isolation and social exclusion is based on a wealth of methodologically sophisticated studies, many of which have been conducted over the last three decades. The data

[31] It is a truism among researchers that "[p]risons are far more shrouded from publicity" than other aspects of the criminal justice system. Aaron Doyle & Richard V. Ericson, *Breaking into Prison: News Sources and Correctional Institutions*, 38 CANADIAN J. CRIMINOLOGY 155, 180 (1996). The lack of direct access affects the nature, amount, and quality of the scholarship as well as news coverage that is devoted to these facilities. *See, e.g.*, Beth Schwartzapfel, *Inside Stories*, COLUM. JOURNALISM REV. (Mar./Apr. 2013), https://archives.cjr.org/cover_story/inside_stories.php [https://perma.cc/6VD7-C4UD].

[32] The inability of researchers to exercise proper control over their prisoner participants doomed several well-intentioned longitudinal studies of solitary confinement, ones in which normal correctional decision-making resulted in unacceptable and confounding levels of attrition and the contamination of research conditions that doomed any meaningful interpretation of the results. *See, e.g.*, Haney, *Psychological Effects of Solitary Confinement*, *supra* note 26.

produced have corroborated, underscored, and deepened what many of us who have been studying prison solitary confinement have learned as well—namely, that meaningful social contact is a fundamental human need whose deprivation has a range of potentially very serious psychological and even physical effects. Because the research on the harmfulness of social isolation in general is so extensive, I am able to review no more than a representative sample of its most important findings in this Essay. However, even this brief summary establishes that there is now an extremely impressive body of scientific knowledge that enables us to more fully understand and appreciate the nature and significance of the adverse effects of solitary confinement in prison.[33]

The need to belong, to be socially connected, and to have social contact with others has been recognized for decades in psychology and other behavioral sciences.[34] Psychologists have long known that social contact is fundamental to establishing and maintaining emotional health and well-being. In fact, years ago, social psychologist Herbert Kelman argued that denying persons contact with others was a form of "dehumanization"—it denied people something that was fundamental to their humanity.[35] As one researcher put it more recently: "Since its inception, the field of psychology emphasized the importance of social connections."[36] Social psychologists have also demonstrated, in classic research conducted decades ago, that "affiliation"—the opportunity to have meaningful contact with others—helps reduce anxiety in the face of uncertainty or fear-arousing stimuli.[37] Indeed, one of the ways that people not only determine the appropriateness of their feelings but also how we establish the very nature and tenor of our emotions is through the social contact we have with others.[38] Thus, prolonged

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[33] *See* Coppola, *supra* note 8, at 186–87 (discussing some of the legal implications of this broader literature for the regulation and elimination of solitary confinement).

[34] *See* Roy F. Baumeister & Mark R. Leary, *The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation*, 117 PSYCHOL. BULL. 497, 497 (1995).

[35] Herbert C. Kelman, *Violence Without Moral Restraint: Reflections on the Dehumanization of Victims and Victimizers*, 29 J. SOC. ISSUES 25 (1973).

[36] C. Nathan DeWall, *Looking Back and Forward: Lessons Learned and Moving Ahead*, *in* THE OXFORD HANDBOOK OF SOCIAL EXCLUSION 301, 301 (C. Nathan DeWall ed., 2013).

[37] *See* STANLEY SCHACHTER, THE PSYCHOLOGY OF AFFILIATION: EXPERIMENTAL STUDIES OF THE SOURCES OF GREGARIOUSNESS (1959); Irving Sarnoff & Philip G. Zimbardo, *Anxiety, Fear, and Social Affiliation*, 62 J. ABNORMAL & SOC. PSYCHOL. 356, 356 (1961); Philip Zimbardo & Robert Formica, *Emotional Comparison and Self-Esteem as Determinants of Affiliation*, 31 J. PERSONALITY 141 (1963).

[38] *See* CAROLYN SAARNI, THE DEVELOPMENT OF EMOTIONAL COMPETENCE (1999); Agneta H. Fischer, Antony S.R. Manstead & Ruud Zaalberg, *Social Influences on the Emotion Process*, 14 EUR. REV. SOC. PSYCHOL. 171 (2003); Stanley Schachter & Jerome E. Singer, *Cognitive, Social, and Physiological Determinants of Emotional State*, 69 PSYCHOL. REV. 379, 383–84 (1962); Steven R. Truax,

social deprivation is painful and destabilizing in part because it deprives persons of the opportunity to ground their thoughts and emotions in a meaningful social context—to know what they feel and whether those feelings are appropriate.

In addition, Naomi Eisenberger and Matthew Lieberman and others have concluded that there is a neurological basis for "social pain"—the feelings of hurt and distress that come from negative social experiences such as social deprivation, exclusion, rejection, or loss. They and their colleagues have found that the neurological underpinnings of social and physical pain are related; both kinds of feelings share some of the same neural circuitry and computational mechanisms (i.e., they are processed in some of the same ways).[39] Moreover, as they observed, unlike the experience of physical pain, which is largely transitory, social pain is more susceptible to being relived. Indeed, although persons who experience physical pain can recall the qualities and degree of intensity of the painful experience, they are largely unable to reexperience the sensation. Social pain, on the other hand, engages the affective pain system and can be actually relived months, or even years, later.[40]

Not surprisingly then, numerous scientific studies have established the psychological significance of social contact, connectedness, and belongingness. Among other things, researchers have concluded that, as Lieberman put it, the human brain is literally "wired to connect" to other

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Determinants of Emotion Attributions: A Unifying View, 8 MOTIVATION & EMOTION 33 (1984). *See generally* THE SOCIAL LIFE OF EMOTIONS (Larissa Z. Tiedens & Colin Wayne Leach eds., 2004).

[39] *See* Naomi I. Eisenberger, *The Pain of Social Disconnection: Examining the Shared Neural Underpinnings of Physical and Social Pain*, 13 NATURE REVS.: NEUROSCIENCE 421, 421 (2012). Eisenberger's and related research found that, although physical and social pain are "not the same experience," they do "share some underlying neural substrates," and there is "a common experiential element" to them both that "motivates individuals to terminate or escape the negative stimulus" they represent. Naomi I. Eisenberger, *Social Pain and the Brain: Controversies, Questions, and Where to Go from Here*, 66 ANN. REV. PSYCHOL. 601, 621 (2015); *see also* Naomi I. Eisenberger, Matthew D. Lieberman & Kipling D. Williams, *Does Rejection Hurt? An fMRI Study of Social Exclusion*, 302 SCIENCE 290 (2003); Naomi I. Eisenberger & Matthew D. Lieberman, *Why Rejection Hurts: A Common Neural Alarm System for Physical and Social Pain*, 8 TRENDS COGNITIVE SCI. 294, 294 (2004); Meghan L. Meyer, Kipling D. Williams & Naomi I. Eisenberger, *Why Social Pain Can Live On: Different Neural Mechanisms Are Associated with Reliving Social and Physical Pain*, PLOS ONE (June 10, 2015) [hereinafter Meyer et al., *Why Social Pain Can Live On*], https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0128294 [https://perma.cc/GDU5-P26T].

[40] Meghan L. Meyer and her colleagues noted that "reliving a socially painful event could lead to other affective experiences besides pain, such as feelings of sadness, loss, or even anger." Meyer et al., *Why Social Pain Can Live On*, *supra* note 39.

persons.[41] Thwarting this need to connect not only undermines psychological well-being but also increases physical morbidity and mortality.[42] Social contact is crucial to normal human development, and when it is impaired, disrupted, or denied, a host of interrelated maladies occur in children as well as adults.[43] Thus, the deprivation of something as fundamentally important as social contact produces a range of predictably negative effects.

Some of the most dramatic demonstrations of the harmful effects of social deprivation have been found in animal research, where researchers are able to employ more intrusive scientific procedures and controls than with humans. These studies have found that social isolation actually alters the brain's neurochemistry, structure, and function. Thus, social isolation operates as a chronic stressor that can change the brain chemistry of animals in ways that negatively affect the cellular mechanisms of aging,[44] precipitate depression-like behavior in mammals,[45] and suppress the animal immune response to illness.[46] Social isolation also leads to anxiety-like behavior in animals, impairs their working memory, and disrupts their brain activity.[47] It also modifies their neuroendocrinal responses in ways that exacerbate the effects of stress,[48] which suggests that isolation is not only stressful in its own

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[41] MATTHEW D. LIEBERMAN, SOCIAL: WHY OUR BRAINS ARE WIRED TO CONNECT (2013). Lieberman wrote that: "Our brains evolved to experience threats to our social connections in much the same way they experience physical pain . . . . The neural link between social and physical pain also ensures that staying socially connected will be a lifelong need, like food and warmth." *Id.* at 4–5.

[42] *See infra* notes 65–81 and the studies cited therein.

[43] *See, e.g.*, Linda A. Chernus, *"Separation/Abandonment/Isolation Trauma:" What We Can Learn from Our Nonhuman Primate Relatives*, 8 J. EMOTIONAL ABUSE 469, 470 (2008) (discussing the harmful developmental consequences of early social deprivation in the form of maternal loss for humans and nonhuman primates).

[44] *See* Jennie R. Stevenson, Elyse K. McMahon, Winnie Boner & Mark F. Haussmann, *Oxytocin Administration Prevents Cellular Aging Caused by Social Isolation*, 103 PSYCHONEUROENDROCRINOLOGY 52, 52–53 (2019).

[45] *See* Yu Gong, Lijuan Tong, Rongrong Yang, Wenfeng Hu, Xingguo Xu, Wenjing Wang, Peng Wang, Xu Lu, Minhui Gao, Yue Wu, Xing Xu, Yaru Zhang, Zhuo Chen & Chao Huang, *Dynamic Changes in Hippocampal Microglia Contribute to Depressive-Like Behavior Induced by Early Social Isolation*, 135 NEUROPHARMACOLOGY 223 (2018).

[46] *See* John P. Capitanio, Stephanie Cacioppo & Steven W. Cole, *Loneliness in Monkeys: Neuroimmune Mechanisms*, 28 CURRENT OPINION BEHAV. SCI. 51, 51 (2019); Wenjuan Wu, Takeshi Yamaura, Koji Murakami, Jun Murata, Kinzo Matsumoto, Hiroshi Watanabe & Ikuo Saiki, *Social Isolation Stress Enhanced Liver Metastasis of Murine Colon 26-L5 Carcinoma Cells by Suppressing Immune Response in Mice*, 66 LIFE SCI. 1827, 1827–28 (2000).

[47] *See* Candela Zorzo, Magdalena Méndez-López, Marta Méndez & Jorge L. Arias, *Adult Social Isolation Leads to Anxiety and Spatial Memory Impairment: Brain Activity Pattern of COx and c-Fos*, 365 BEHAV. BRAIN RES. 170, 170–71 (2019).

[48] *See* Juliano Viana Borges, Betânia Souza de Freitas, Vinicius Antoniazzi, Cristophod de Souza dos Santos, Kelem Vedovelli, Vivian Naziaseno Pires, Leticia Paludo, Maria Noêmia Martins de Lima & Elke Bromberg, *Social Isolation and Social Support at Adulthood Affect Epigenetic Mechanisms, Brain-*

right, but also compromises an organism's ability to tolerate and manage stress more generally.[49]

In fact, the damaging effects of social isolation on laboratory animals are so well documented that they have led governmental and scientific funding organizations, such as the National Research Council, to prohibit researchers from placing animals in completely isolated conditions for prolonged periods.[50] Such treatment is considered unethical and constitutes a basis for denying or revoking funding to scientists who violate this prohibition. As a result, university research facilities that conduct animal research have "institutional animal care and use committees" that promulgate guidelines for conducting animal research, virtually all of which include limitations on the degree to which laboratory animals can be subjected to any form of social isolation.[51]

Derived Neurotrophic Factor Levels and Behavior of Chronically Stressed Rats, 366 BEHAV. BRAIN RES. 36, 36–37 (2019); Marishka K. Brown, Ewa Strus & Nirinjini Naidoo, *Reduced Sleep During Social Isolation Leads to Cellular Stress and Induction of the Unfolded Protein Response*, 40 SLEEP 1, 1 (2017).

[49] Some researchers have discerned what they believe is a relationship between isolation and an animal world analogue of PTSD, noting, for example, that socially isolated mice manifest "an exacerbation of aggressive behavior and . . . an increase in anxiety- and depressive-like behaviors, as well as . . . exaggerated contextual fear responses and impaired fear extinction." Andrea Locci & Graziano Pinna, *Social Isolation as a Promising Animal Model of PTSD Comorbid Suicide: Neurosteroids and Cannabinoids as Possible Treatment Options*, 92 PROGRESS NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY 243, 244 (2019) (citation omitted).

[50] The National Research Council cautions researchers that, because "[a]ppropriate social interactions among members of the same species" are "essential to normal development and well-being," the "[s]ingle housing of social species should be the exception and justified based on experimental requirements or veterinary-related concerns about animal well-being," "limited to the minimum period necessary," and "enrich[ed]" either by other forms of species-compatible (and even human) contact. INST. FOR LAB. ANIMAL RESEARCH, NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., GUIDE FOR THE CARE AND USE OF LABORATORY ANIMALS 64 (8th ed. 2011); *see also* Alka Chandna, *Commentary: A Belmont Report for Animals: An Idea Whose Time Has Come*, 29 CAMBRIDGE Q. HEALTHCARE ETHICS 46, 47–48 (2020) (referencing studies documenting the suffering and self-destructive behavior engaged in by laboratory animals confined in "ethologically inappropriate environments" such as social isolation, including the pathological reactions that occur "when primates are deprived of companionship, sufficient space, and sufficient environmental complexity").

[51] For example, Emory University's animal care guidelines mandate "environmental enrichment" for nonhuman primates used in research. The enrichment is aimed at "identifying and providing the environmental stimuli necessary for psychological and physiological wellbeing." INSTITUTIONAL ANIMAL CARE AND USE COMM., EMORY UNIV., ENVIRONMENTAL ENRICHMENT FOR NONHUMAN PRIMATES 1 (2019), http://www.iacuc.emory.edu/documents/policies/360_Environmental_Enrichment_for_Nonhuman_Primates.pdf [https://perma.cc/5UTL-8YJ5] (citation omitted). The Emory guidelines mandate that "all nonhuman primates must be housed with one or more members of the same species." *Id.* at 2. Any exception to this policy requires advanced approval and is "reviewed by the Attending Veterinarian every 30 days." *Id.*

Of course, the results of animal studies are not directly transferable to human populations. However, hundreds of studies done with human participants have reached many of the same conclusions. As I noted above, the scientific literature that documents these adverse effects is far too voluminous to comprehensively review. In the summary that follows, to narrow the focus to a manageable, yet representative sample of studies, I will concentrate primarily on those published in just the last several years.

Scientists have continued to add to existing knowledge about the ways in which social isolation and loneliness in society at large are significant risk factors for a wide range of mental health problems.[52] Specifically, social isolation increases the prevalence of depression and anxiety among

[52] Although very closely related, the experiences of "loneliness" and "social isolation" are not identical. Loneliness is the negative *subjective* feeling of being isolated or disconnected from others, whereas social isolation is the *objective* condition of that disconnection. For obvious reasons, animal studies focus only on the effects of social isolation; studies with human participants may examine one or another or both experiences. *See, e.g.*, Nancy E.G. Newall & Verena H. Menec, *Loneliness and Social Isolation of Older Adults: Why It Is Important to Examine These Social Aspects Together*, 36 J. SOC. & PERS. RELATIONSHIPS 925, 926–27 (2019); Kimberley J. Smith & Christina Victor, *Typologies of Loneliness, Living Alone, and Social Isolation, and Their Associations with Physical and Mental Health*, 39 AGEING & SOC'Y 1709, 1710 (2019); Jingyi Wang, Brynmor Lloyd-Evans, Domenico Giacco, Rebecca Forsyth, Cynthia Nebo, Farhana Mann & Sonia Johnson, *Social Isolation in Mental Health: A Conceptual and Methodological Review*, 52 SOC. PSYCHIATRY & PSYCHIATRIC EPIDEMIOLOGY 1451 (2017). Not surprisingly, there are high levels of loneliness among prisoners housed in the extreme social isolation of solitary confinement. *See* Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 136. In my review of the broader scientific literature, I will refer to the experience—loneliness or social isolation—as it is identified in the research itself.

adolescents and adults[53] and is also related to psychosis,[54] paranoia,[55] and suicidal behavior.[56] Among those persons who already have been diagnosed or identified as suffering from psychiatric disorders in free society, isolation has been implicated in the persistence of delusional or psychotic beliefs,[57] a lack of insight into one's psychiatric symptoms,[58] and a higher rate of

[53] *See, e.g.*, Joshua Hyong-Jin Cho, Richard Olmstead, Hanbyul Choi, Carmen Carrillo, Teresa E. Seeman & Michael R. Irwin, *Associations of Objective Versus Subjective Social Isolation with Sleep Disturbance, Depression, and Fatigue in Community-Dwelling Older Adults*, 23 AGING & MENTAL HEALTH 1130 (2019); Nathaniel A. Dell, Michelle Pelham & Allison M. Murphy, *Loneliness and Depressive Symptoms in Middle Aged and Older Adults Experiencing Serious Mental Illness*, 42 PSYCHIATRIC REHABILITATION J. 113 (2019); S. Häfner, R.T. Emeny, M.E. Lacruz, J. Baumert, C. Herder, W. Koenig, B. Thorand & K.H. Ladwig, *Association Between Social Isolation and Inflammatory Markers in Depressed and Non-Depressed Individuals: Results from the MONICA/KORA Study*, 25 BRAIN, BEHAV., & IMMUNITY 1701 (2011); Lisa M. Jaremka, Rebecca R. Andridge, Christopher P. Fagundes, Catherine M. Alfano, Stephen P. Povoski, Adele M. Lipari, Doreen M. Agnese, Mark W. Arnold, William B. Farrar, Lisa D. Yee, William E. Carson, III, Tanios Bekaii-Saab, Edward W. Martin, Jr., Carl R. Schmidt & Janice K. Kiecolt-Glaser, *Pain, Depression and Fatigue: Loneliness as a Longitudinal Risk Factor*, 33 HEALTH PSYCHOL. 948 (2014); C. Richardson, E. Oar, J. Fardouly, N. Magson, C. Johnco, M. Forbes & R. Rapee, *The Moderating Role of Sleep in the Relationship Between Social Isolation and Internalising Problems in Early Adolescence*, 50 CHILD PSYCHIATRY & HUM. DEV. 1011 (2019); Ilse M. J. van Beljouw, Eric van Exel, Jenny de Jong Gierveld, Hannie C. Comijs, Marjolijn Heerings, Max. L. Stek & Harm W. J. van Marwijk, *"Being All Alone Makes Me Sad": Loneliness in Older Adults with Depressive Symptoms*, 26 INT'L PSYCHOGERIATRICS 1541 (2014); Lixia Ge, Chun Wei Yap, Reuben Ong & Bee Hoon Heng, *Social Isolation, Loneliness and Their Relationships with Depressive Symptoms: A Population-Based Study*, PLOS ONE (Aug. 23, 2017), https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0182145 [https://perma.cc/63Q4-YZME].

[54] *See, e.g.*, Anson K. C. Chau, Chen Zhu & Suzanne Ho-Wai So, *Loneliness and the Psychosis Continuum: A Meta-Analysis on Positive Psychotic Experiences and a Meta-Analysis on Negative Psychotic Experiences*, 31 INT'L REV. PSYCHIATRY 5 (2019); Dorothy Ann Nejedlo DeNiro, *Perceived Alienation in Individuals with Residual-Type Schizophrenia*, 16 ISSUES IN MENTAL HEALTH NURSING 185 (1995).

[55] *See, e.g.*, Sarah Butter, Jamie Murphy, Mark Shevlin & James Houston, *Social Isolation and Psychosis-Like Experiences: A UK General Population Analysis*, 9 PSYCHOSIS 291 (2017).

[56] *See, e.g.*, COMM. ON PATHOPHYSIOLOGY & PREVENTION OF ADOLESCENT & ADULT SUICIDE, INST. OF MED. OF THE NAT'L ACADS., REDUCING SUICIDE: A NATIONAL IMPERATIVE (S.K. Goldsmith, T. C. Pellmar, A. M. Kleinman & W. E. Burney eds., 2002); Raffaella Calati, Chiara Ferrari, Marie Brittner, Osmano Oasi, Emilie Olié, André F. Carvalho & Philippe Courtet, *Suicidal Thoughts and Behaviors and Social Isolation: A Narrative Review of the Literature*, 245 J. AFFECTIVE DISORDERS 653 (2019); John L. Oliffe, Genevieve Creighton, Steve Robertson, Alex Broom, Emily K. Jenkins, John S. Ogrodniczuk & Oliver Ferlatte, *Injury, Interiority, and Isolation in Men's Suicidality*, 11 AM. J. MEN'S HEALTH 888 (2017).

[57] *See, e.g.*, P. A. Garety, E. Kuipers, D. Fowler, D. Freeman & P. E. Bebbington, *A Cognitive Model of the Positive Symptoms of Psychosis*, 31 PSYCHOL. MED. 189, 190–91 (2001) (writing about the way that social marginalization contributes to beliefs about the self as "vulnerable to threat, or about others as dangerous" and the way that "social isolation contributes to the acceptance of . . . psychotic appraisal by reducing access to alternative more normalizing explanations").

[58] *See, e.g.*, R. White, P. Bebbington, J. Pearson, S. Johnson & D. Ellis, *The Social Context of Insight in Schizophrenia*, 35 SOC. PSYCHIATRY & PSYCHIATRIC EPIDEMIOLOGY 500 (2000).

hospitalization and rehospitalization.[59] Persons experiencing mental health crises also report severe loneliness which may, in turn, exacerbate their mental illness,[60] creating a downward spiral toward decompensation.

Social isolation can also lead to reduced cognitive functioning in humans.[61] Some studies have shown that the significant direct relationship between loneliness and decreased cognitive functioning is partially mediated by the presence of depressive symptoms.[62] However, a study by Elvira Lara and her colleagues found that loneliness and social isolation lead to decreased intellectual functioning on a variety of cognitive tests over time, even after controlling for depression among older participants. To prevent such a decline, the study recommended "the enhancement of social participation and the maintenance of emotionally supportive relationships."[63] Other studies demonstrate that even when loneliness does not directly produce cognitive decline, it has an effect on neural processes that, in turn, "relate[s] to worse cognitive performance on processing speed and attention, executive function, working memory, and verbal memory immediate recall."[64]

As in studies with laboratory animals, there are a number of well documented harmful physical and medical outcomes associated with social isolation and loneliness in humans, including adverse effects on neurological

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[59] *See, e.g.*, Tennyson Mgutshini, *Risk Factors for Psychiatric Re-Hospitalization: An Exploration*, 19 INT'L J. MENTAL HEALTH NURSING 257 (2010); Graham Thornicroft, *Social Deprivation and Rates of Treated Mental Disorder: Developing Statistical Models to Predict Psychiatric Service Utilisation*, 158 BRIT. J. PSYCHIATRY 475 (1991).

[60] *See, e.g.*, Jingyi Wang, Brynmor Lloyd-Evans, Louise Martson, Ruimin Ma, Farhana Mann, Francesca Solmi & Sonia Johnson, *Epidemiology of Loneliness in a Cohort of UK Mental Health Community Crisis Service Users*, 55 SOC. PSYCHIATRY & PSYCHIATRIC EPIDEMIOLOGY 811 (2019).

[61] *See, e.g.*, Paolo de Sousa, William Sellwood, Alaw Eldridge & Richard P. Bentall, *The Role of Social Isolation and Social Cognition in Thought Disorder*, 269 PSYCHIATRY RES. 56 (2018); Laura Fratiglioni, Hui-Xin Wang, Kjerstin Ericsson, Margaret Maytan & Bengt Winblad, *Influence of Social Network on Occurrence of Dementia: A Community-Based Longitudinal Study*, 355 LANCET 1315 (2000); Aparna Shankar, Mark Hamer, Anne McMunn & Andrew Steptoe, *Social Isolation and Loneliness: Relationships with Cognitive Function During 4 Years of Follow-Up in the English Longitudinal Study of Ageing*, 75 PSYCHOSOMATIC MED. 161 (2013).

[62] *See, e.g.*, Joanna McHugh Power, Jianjun Tang, Rose Ann Kenny, Brian A. Lawlor & Frank Kee, *Mediating the Relationship Between Loneliness and Cognitive Function: The Role of Depressive and Anxiety Symptoms*, 24 AGING & MENTAL HEALTH 1071, 1076 (2019) (noting that among older adults there is likely a reciprocal effect between loneliness and decreased cognitive functioning).

[63] Elvira Lara, Francisco Félix Caballero, Laura Alejandra Rico-Uribe, Beatriz Olaya, Josep Maria Haro, José Luis Ayuso-Mateos & Marta Miret, *Are Loneliness and Social Isolation Associated with Cognitive Decline?*, 34 INT'L J. GERIATRIC PSYCHIATRY 1613, 1614, 1620 (2019).

[64] Terea Montoliu, Vanesa Hidalgo & Alicia Salvador, *The Relationship Between Loneliness and Cognition in Healthy Older Men and Women: The Role of Cortisol*, 107 PSYCHONEUROENDOCRINOLOGY 270, 277 (2019).

and endocrinological processes. As one group of researchers summarized, "These findings indicate that loneliness may compromise the structural and functional integrity of multiple brain regions."[65] For example, Nathan Spreng and his colleagues have shown that loneliness is inversely related to a sense of "life meaning" (i.e., a subjective sense of purpose), and that both are in turn related to measures of neural connectivity.[66] In addition, social isolation adversely impacts the functioning of the human immune system,[67] undermines health outcomes in general,[68] and is associated with higher rates of mortality. That is, the experience of social isolation literally lowers the age at which people die.[69] In fact, researchers have concluded that the health

[65] Laetitia Mwilambwe-Tshilobo, Tian Ge, Minqi Chong, Michael A. Ferguson, Bratislav Misic, Anthony L. Burrow, Richard M. Leahy & R. Nathan Spreng, *Loneliness and Meaning in Life Are Reflected in the Intrinsic Network Architecture of the Brain*, 14 SOC. COGNITIVE & AFFECTIVE NEUROSCIENCE 423, 424 (2019); *see also* Jacob Y. Stein, Yafit Levin, Yael Lahav, Orit Uziel, Heba Abumock & Zahava Solomon, *Perceived Social Support, Loneliness, and Later Life Telomere Length Following Wartime Captivity*, 37 HEALTH PSYCH. 1067 (2018).

[66] Mwilambwe-Tshilobo et al., *supra* note 65.

[67] *See, e.g.*, Naomi I. Eisenberger, Mona Moieni, Tristen K. Inagaki, Keely A. Muscatell & Michael R. Irwin, *In Sickness and in Health: The Co-Regulation of Inflammation and Social Behavior*, 42 NEUROPSYCHOPHARMACOLOGY REVIEWS. 242 (2017); Sarah D. Pressman, Sheldon Cohen, Gregory E. Miller, Anita Barkin, Bruce S. Rabin & John J. Treanor, *Loneliness, Social Network Size, and Immune Response to Influenza Vaccination in College Freshmen*, 24 HEALTH PSYCH. 297 (2005); Bert N. Uchino, Ryan Trettevik, Robert G. Kent de Grey, Sierra Cronan, Jasara Hogan & Brian R. W. Baucom, *Social Support, Social Integration, and Inflammatory Cytokines: A Meta-Analysis*, 37 HEALTH PSYCH. 462 (2018).

[68] *See, e.g.*, Johannes Beller & Adina Wagner, *Loneliness, Social Isolation, Their Synergistic Interaction, and Mortality*, 37 HEALTH PSYCH. 808 (2018); Caitlin E. Coyle & Elizabeth Dugan, *Social Isolation, Loneliness and Health Among Older Adults*, 24 J. AGING & HEALTH 1346 (2012); Damiano Fiorillo & Fabio Sabatini, *Quality and Quantity: The Role of Social Interactions in Self-Reported Individual Health*, 73 SOC. SCI. & MED. 1644 (2011); Liesl M. Heinrich & Eleonora Gullone, *The Clinical Significance of Loneliness: A Literature Review*, 26 CLINICAL PSYCH. REV. 695 (2006).

[69] *See* Marko Elovainio, Christian Hakulinen, Laura Pulkki-Råback, Marianna Virtanen, Kim Josefsson, Markus Jokela, Jussi Vahtera & Mika Kivimäki, *Contribution of Risk Factors to Excess Mortality in Isolated and Lonely Individuals: An Analysis of Data from the UK Biobank Cohort Study*, 2 LANCET PUB. HEALTH e260 (2017); Brett Friedler, Joshua Crapser & Louise McCullough, *One Is the Deadliest Number: The Detrimental Effects of Social Isolation on Cerebrovascular Diseases and Cognition*, 129 ACTA NEUROPATHOLOGY 493 (2015); Louise C. Hawkley & John T. Cacioppo, *Loneliness Matters: A Theoretical and Empirical Review of Consequences and Mechanisms*, 40 ANNALS BEHAV. MED. 218, 219 (2010); Julianne Holt-Lunstad, Timothy B. Smith & J. Bradley Layton, *Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review*, 10 PERSPS. PSYCH. SCI. 227 (2015); Matthew Pantell, David Rehkopf, Douglas Jutte, Leonard Syme, John Balmes & Nancy Adler, *Social Isolation: A Predictor of Mortality Comparable to Traditional Clinical Risk Factors*, 103 AM. J. PUB. HEALTH 2056 (2013); Jussi Tanskanen & Timo Anttila, *A Prospective Study of Social Isolation, Loneliness, and Mortality in Finland*, 106 AM. J. PUB. HEALTH 2042 (2016); Andrea Fleisch Marcus, Alex H. Illescas, Bernadette C. Hohl & Adana A. M. Llanos, *Relationships Between Social Isolation, Neighborhood Poverty, and Cancer Mortality in a Population-Based Study of US Adults*,

risk of social isolation on mortality rates is comparable to that caused by cigarette smoking.[70]

In part because of its dramatic life-shortening effects, as one recent review of the literature put it, "The problem of loneliness and social isolation is of growing global concern."[71] Indeed, the well-documented negative psychological and physical effects of social isolation and loneliness have led to international recognition that they represent a worldwide public health crisis.[72] Acknowledging this fact, an international commission assembled by former French President Nicholas Sarkozy and led by Nobel Prize winners Joseph Stiglitz and Amartya Sen and economist Jean-Paul Fitoussi identified social connectedness as one of the key indicators of a nation's social progress, quality of life, and well-being.[73] More recently, the social isolation of older adults was the focus of two Canadian National Seniors Council reports, which discussed the nature of the psychological and medical risks of social isolation and what can be done to address them.[74] In 2017, the former Surgeon General of the United States, Vivek Murthy, warned business leaders about what he described as a "loneliness epidemic" and its harmful health consequences.[75] In a more recent book, Murthy elaborated on the

PLOS ONE (Mar. 8, 2017), https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0173370 [https://perma.cc/89KS-DGE3].

[70] *See* Julianne Holt-Lunstad, Timothy B. Smith, Mark Baker, Tyler Harris & David Stephenson, *Social Relationships and Mortality Risk: A Meta-Analytic Review*, PLOS MED. (July 27, 2010), https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000316 [https://perma.cc/J8DP-JN99].

[71] Cathrine Mihalopoulos, Long Khanh-Dao Le, Mary Lou Chatterton, Jessica Bucholc, Julianne Holt-Lunstad, Michelle H. Lim & Lidia Engel, *The Economic Costs of Loneliness: A Review of Cost-of-Illness and Economic Evaluation Studies*, 55 SOC. PSYCHIATRY & PSYCHIATRIC EPIDEMIOLOGY 823, 834 (2019). Although the authors concluded that it was difficult to precisely estimate the economic costs of loneliness and social isolation, they noted that most studies "reported excess healthcare costs associated with loneliness/isolation," and that the projected costs "are likely to be under-estimated." *Id.*

[72] *See, e.g.*, N. Leigh-Hunt, *An Overview of Systematic Reviews on the Public Health Consequences of Social Isolation and Loneliness*, 152 PUB. HEALTH 157 (2017).

[73] JOSEPH E. STIGLITZ, AMARTYA SEN & JEAN-PAUL FITOUSSI, REPORT BY THE COMMISSION ON THE MEASUREMENT OF ECONOMIC PERFORMANCE AND SOCIAL PROGRESS (2009), https://www.cpc.unc.edu/projects/rlms-hse/publications/1921 [https://perma.cc/KD95-F2GA].

[74] THE NAT'L SENIORS COUNCIL, GOV'T OF CAN., REPORT ON THE SOCIAL ISOLATION OF SENIORS 2013-2014 (2014), https://www.canada.ca/en/national-seniors-council/programs/publications-reports/2014/scoping-social-isolation.html [https://perma.cc/2NY8-8FYH]; THE NAT'L SENIORS COUNCIL, GOV'T OF CAN., WHO'S AT RISK AND WHAT CAN BE DONE ABOUT IT? A REVIEW OF THE LITERATURE ON THE SOCIAL ISOLATION OF DIFFERENT GROUPS OF SENIORS (2017), https://www.canada.ca/en/national-seniors-council/programs/publications-reports/2017/review-social-isolation-seniors.html [https://perma.cc/E4DZ-SSJB].

[75] *See* Vivek Murthy, *Work and the Loneliness Epidemic: Reducing Isolation at Work Is Good for Business*, HARV. BUS. REV. (2017), https://hbr.org/cover-story/2017/09/work-and-the-loneliness-epidemic [https://perma.cc/QWQ6-HZCK]; Dan Schawbel, *Vivek Murthy: How to Solve the Work*

negative effects of social isolation, made recommendations about how to best combat them, and promoted what he called "the healing power of human connection."[76] In 2018, the British Prime Minister, Theresa May, appointed a "Minister for Loneliness" for her nation,[77] as news magazines conceded that it represented a "serious public health problem."[78] Finally, in 2020, in a study designed to contribute to "a larger global effort to combat the adverse health impacts of social isolation,"[79] a National Academy of Sciences Committee concluded that the negative consequences of social isolation "may be comparable to or greater than other well-established risk factors such as smoking, obesity, and physical inactivity,"[80] and another group of prominent researchers termed the experience of loneliness a "modern behavioral epidemic" and cautioned that it represented a "lethal behavioral toxin" that accounted for more annual deaths than cancer or strokes.[81]

Paralleling the research that has been conducted on the adverse psychological and medical effects of social isolation and loneliness, there is a closely related and well-developed body of literature on what has been termed "social exclusion"—what happens when people are involuntarily and purposely separated from others, as they are in prison solitary confinement units. These studies, too, show that this kind of social separation produces a host of serious negative consequences. For example, Mark Leary and his colleagues have shown that increasing degrees of social exclusion can successively lower self-esteem, which in turn relates to greater levels of depression, anxiety, and a host of other psychological problems. In fact, they have suggested that self-esteem itself may be largely a reflection of a

Loneliness Epidemic, FORBES (Oct. 7, 2017, 9:54 AM), https://www.forbes.com/sites/danschawbel/2017/10/07/vivek-murthy-how-to-solve-the-work-loneliness-epidemic-at-work/#22653b417172 [https://perma.cc/DNC3-5B4K].

[76] VIVEK H. MURTHY, TOGETHER: THE HEALING POWER OF HUMAN CONNECTION IN A SOMETIMES LONELY WORLD (2020).

[77] *See* Ceylan Yeginsu, *U.K. Appoints a Minister for Loneliness*, N.Y. TIMES (Jan. 17, 2018), https://www.nytimes.com/2018/01/17/world/europe/uk-britain-loneliness.html [https://perma.cc/QX94-ZY7A].

[78] *Loneliness Is a Serious Public-Health Problem*, ECONOMIST (Sept. 1, 2018), https://www.economist.com/international/2018/09/01/loneliness-is-a-serious-public-health-problem [https://perma.cc/YQ3X-P2SJ].

[79] COMM. ON THE HEALTH & MED. DIMENSIONS OF SOC. ISOLATION & LONELINESS IN OLDER ADULTS, THE NAT'L ACADS. OF SCIS., ENG'G & MED., SOCIAL ISOLATION AND LONELINESS IN OLDER ADULTS: OPPORTUNITIES FOR THE HEALTH CARE SYSTEM, at xii (2020).

[80] *Id.* at 2–12.

[81] Dilip V. Jeste, Ellen E. Lee & Stephanie Cacioppo, *Battling the Modern Behavioral Epidemic of Loneliness: Suggestions for Research and Interventions*, 77 JAMA PSYCHIATRY 553 (2020).

person's level or state of social connectedness.[82] Researchers have also documented the fact that excluding persons from contact with others is not only "painful in itself," but also "undermines people's sense of belonging, control, self-esteem, and meaningfulness, . . . reduces pro-social behavior, and impairs self-regulation."[83] Indeed, the subjective experience of social exclusion can result in what have been called "cognitive deconstructive states," which include emotional numbing, reduced empathy, cognitive inflexibility, lethargy, and an absence of meaningful thought.[84]

Social exclusion also has been shown to heighten people's feelings of physical vulnerability and increase the expectation that they will experience physical harm in the future.[85] It may also precipitate aggressive behavior—"action-oriented coping"—in response.[86] Two authors summarized these overall effects this way:

> Social exclusion is detrimental and can lead to depression, alienation, and sometimes even to violent behaviour. Laboratory studies show that even a brief episode of exclusion lowers mood, causes social pain, which is analogous to physical pain, and elicits various behavioural responses, such as aggressive behaviour or affiliation-seeking behavior.[87]

In fact, the editor of the *Oxford Handbook of Social Exclusion* concluded the volume by summarizing the "serious threat" that social exclusion represents to psychological health and well-being, including "increase[d] salivary cortisol levels . . . and blood flow to brain regions

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[82] *See, e.g.*, Mark R. Leary, Alison L. Haupt, Kristine S. Straussen & Jason T. Chokel, *Calibrating the Sociometer: The Relationship Between Interpersonal Appraisals and State Self-Esteem*, 74 J. PERSONALITY & SOC. PSYCHOL. 1290, 1297–98 (1998); Mark R. Leary, Lisa S. Schreindorfer & Alison L. Haupt, *The Role of Low Self-Esteem in Emotional and Behavioral Problems: Why Is Low Self-Esteem Dysfunctional?*, 14 J. SOC. & CLINICAL PSYCHOL. 297, 307 (1995).

[83] Brock Bastian & Nick Haslam, *Excluded from Humanity: The Dehumanizing Effects of Social Ostracism*, 46 J. EXPERIMENTAL SOC. PSYCHOL. 107, 107 (2010) (internal citations omitted).

[84] *See* Jean M. Twenge, Kathleen R. Catanese & Roy F. Baumeister, *Social Exclusion and the Deconstructed State: Time Perception, Meaninglessness, Lethargy, Lack of Emotion, and Self-Awareness*, 85 J. PERSONALITY & SOC. PSYCHOL. 409, 411, 415, 421 (2003).

[85] *See, e.g.*, Kristy K. Dean, Grace Wentworth & Nikole LeCompte, *Social Exclusion and Perceived Vulnerability to Physical Harm*, 18 SELF & IDENTITY 87 (2019).

[86] Katharina Reiter-Scheidl, Ilona Papousek, Helmut K. Lackner, Manuela Paechter, Elisabeth M. Weiss & Nilüfer Aydin, *Aggressive Behavior After Social Exclusion Is Linked with the Spontaneous Initiation of More Action-Oriented Coping Immediately Following the Exclusion Episode*, 195 PHYSIOLOGY & BEHAV. 142, 142, 148 (2018).

[87] Aleksi H. Syrjämäki & Jari K. Hietanen, *The Effects of Social Exclusion on Processing of Social Information—A Cognitive Psychology Perspective*, 58 BRIT. J. SOC. PSYCHOL. 730, 730 (2018) (citations omitted) (footnotes omitted); *see also* C. Nathan DeWall, Timothy Deckman, Richard S. Pond, Jr. & Ian Bonser, *Belongingness as a Core Personality Trait: How Social Exclusion Influences Social Functioning and Personality Expression*, 79 J. PERSONALITY 1281, 1281–82 (2011).

associated with physical pain," "sweeping changes" in attention, memory, thinking, and self-regulation, as well as changes in aggression and prosocial behavior. As he put it, "This dizzying array of responses to social exclusion supports the premise that it strikes at the core of well-being."[88]

An additional, painful component of solitary confinement is the fact that prisoners in such units are denied opportunities to give and receive caring human touch. Many of them go for weeks, months, or even years without touching another person with affection. This kind of deprivation also has been studied extensively in contexts outside prison. Psychologists have long known that "[t]ouch is central to human social life. It is the most developed sensory modality at birth, and it contributes to cognitive, brain, and socioemotional development throughout infancy and childhood."[89] Recent research now indicates that "touch is a primary platform for the development of secure attachments and cooperative relationships."[90] We know that, among other things, it is "intimately involved in patterns of caregiving."[91] Indeed, caring physical touch functions as a "powerful means by which individuals reduce the suffering of others."[92] It also "promotes cooperation and reciprocal altruism."[93]

The need for caring human touch is so fundamental that early deprivation is an established risk factor for neurodevelopmental disorders, depression, suicidality, and other self-destructive behavior.[94] Later deprivation is associated with violent behavior in adolescents.[95] The uniquely prosocial emotion of "[c]ompassion is universally signaled through touch," so that persons who live in a world without touch are denied the experience

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[88] DeWall, *supra* note 36, at 302; Johan C. Karremans, Dirk J. Heslenfeld, Lotte F. van Dillen & Paul A. M. Van Lange, *Secure Attachment Partners Attenuate Neural Responses to Social Exclusion: An fMRI Investigation*, 81 INT'L J. PSYCHOPHYSIOLOGY 44, 44, 49 (2011).

[89] Matthew J. Hertenstein, Dacher Keltner, Betsy App, Brittany A. Bulleit & Ariane R. Jaskolka, *Touch Communicates Distinct Emotions*, 6 EMOTION 528, 528 (2006). *See generally* THE HANDBOOK OF TOUCH: NEUROSCIENCE, BEHAVIORAL, AND HEALTH PERSPECTIVES 373–499 (Matthew J. Hertenstein & Sandra J. Weiss eds., 2011) (discussing, in Section V, the relevance of touch for development and health).

[90] Jennifer L. Goetz, Dacher Keltner & Emiliana Simon-Thomas, *Compassion: An Evolutionary Analysis and Empirical Review*, 136 PSYCHOL. BULL. 351, 360 (2010).

[91] *Id.*

[92] *Id.*

[93] *Id.*

[94] *See, e.g.*, Carissa J. Cascio, *Somatosensory Processes in Neurodevelopmental Disorders*, 2 J. NEURODEVELOPMENTAL DISORDERS 62, 62–63 (2010) (neurodevelopmental disorders); Tiffany Field, *Touch Deprivation and Aggression Against Self Among Adolescents*, *in* DEVELOPMENTAL PSYCHOBIOLOGY OF AGGRESSION 117, 117 (David M. Stoff & Elizabeth J. Susman eds., 2005) (depression, suicidality, and other self-destructive behavior).

[95] *See* Tiffany Field, *Violence and Touch Deprivation in Adolescents*, 37 ADOLESCENCE 735, 735, 744–45 (2002).

of receiving or expressing compassion in this way.[96] Conversely, a number of experts argue that caring human touch is so integral to our well-being that it is actually therapeutic. Thus, it has been recommended to treat a host of psychological maladies including depression, suicidality, and learning disabilities.[97] Researchers have found that caring human touch mediates a sense of security and place, a sense of shared companionship, a sense of being nurtured, feelings of worth and competence, access to reliable alliance and assistance, and guidance and support in stressful situations.[98] The deprivation of caring human touch in solitary confinement deprives prisoners of these things.

In sum, there is a carefully developed and empirically well-documented scientific framework that catalogues the broad range of very serious adverse effects brought about by social isolation, loneliness, social exclusion, and the deprivation of caring touch. These effects have been found in numerous studies that confirm the destructive and even life-threatening consequences for animals as well as humans. It is important not only to situate the harmfulness of solitary confinement in this larger scientific framework but also to recognize that, for reasons discussed below, the adverse effects of isolation in a *correctional* setting are likely to be far greater.

II. SOLITARY CONFINEMENT AS "TOXIC" SOCIAL ISOLATION

The literature reviewed in the preceding Part summarized findings from studies conducted in a wide range of free-world settings. It is important to acknowledge that, the animal research notwithstanding, the adverse effects of social isolation, loneliness, social exclusion, and the deprivation of caring human touch that I reviewed above were assessed in environments that are much more benign than those that prevail in jail and prison solitary confinement units. By virtually any measure, solitary confinement in correctional settings is likely to be significantly *more* stressful, hurtful, harmful, and dangerous than in the larger society, where the range of deleterious effects I reviewed in the previous Part have been elaborately documented.

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[96] *See, e.g.*, Jennifer E. Stellar & Dacher Keltner, *Compassion*, *in* HANDBOOK OF POSITIVE EMOTIONS 329, 337 (Michele M. Tugade, Michelle N. Shiota & Leslie D. Kirby eds., 2014).

[97] *See, e.g.*, Susan Dobson, Shripati Upadhyaya, Ian Conyers & Raghu Raghavan, *Touch in the Care of People with Profound and Complex Needs*, 6 J. LEARNING DISABILITIES 351, 360 (2002); Field, *supra* note 94, at 134.

[98] *See, e.g.*, Robert S. Weiss, *The Attachment Bond in Childhood and Adulthood*, *in* ATTACHMENT ACROSS THE LIFE CYCLE 72–75 (Colin Murray Parkes, Joan Stevenson-Hinde & Peter Marris eds., 1995).

Of course, there are arguably "better" and "worse" solitary confinement units, and prisoners are likely to suffer more and deteriorate more rapidly in those that are the harshest and most deprived. Thus, psychologist Carl Clements and his colleagues were surely correct to observe that relevant "[c]ontext factors includ[ing] privacy, access to daylight, length of cell confinement per day, noise and overcrowding levels, and staff functioning"[99] have some bearing on the isolated prisoner's well-being. Yet, even their discussion seemed to ignore what researchers now understand to be the most destructive aspect of solitary confinement—the deprivation of meaningful human social contact. As the larger literature I reviewed on social isolation and loneliness underscores, although the immediate discomforting aspects of the experience can be ameliorated, it is isolation itself that is dangerous.

Obviously, lonely, isolated persons in the free world are likely to have far more privacy, access to nature, freedom of movement, and so on than prisoners housed in solitary confinement. Yet they are still at great psychological and physical risk by virtue of their social isolation. The onerous aspects of prison and jail isolation only intensify the painfulness of this powerful stressor and worsen its impact. For one, prison and jail solitary confinement is a form of coercively enforced and nearly complete isolation. As I have noted before, "There is no other place on earth where persons are so completely and involuntarily isolated from one another."[100] Except in special cases, prisoners rarely go willingly into solitary confinement. Indeed, in many instances they must be forcibly removed from their cells ("cell extracted") and taken to solitary confinement by special tactical units of correctional officers who are suited up in body armor, armed with special weapons (e.g., batons, pepper spray, tasers), and who operate in tandem to physically control, subdue, and dominate prisoners.[101] The elaborate procedures correctional officers are routinely instructed to employ means that the encounters themselves are inherently confrontational and prone to

[99] Clements et al., *supra* note 30, at 926.

[100] Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 132.

[101] In California, Department of Corrections procedures explicitly instructed standard five-man cell extraction teams to proceed in this fashion: the first member of the team enters the cell carrying a large shield, used to push the prisoner back into a corner of the cell; the second member follows closely, wielding a special cell extraction baton, to strike the inmate on the upper part of his body to induce him to raise his arms in self-protection; thus unsteadied, the inmate is pulled off balance by another member of the team whose job is to place leg irons around his ankles; once downed, a fourth member of the team places him in handcuffs; the fifth member stands ready to fire a taser gun or rifle that shoots wooden or rubber bullets at prisoners who continue to resist. Craig Haney, *"Infamous Punishment": The Psychological Consequences of Isolation*, 8 NAT'L PRISON PROJECT J. 3, 21 n.6 (1993).

escalation. It is not uncommon for them to turn increasingly physically violent and, in that sense, they are traumatic for everyone involved.[102]

To take just one firsthand account, here is the description of Mika'il DeVeaux, a sociology lecturer who spent twenty-five years incarcerated in the New York State prison system. He observed frequent cell extractions (termed "being dragged out") occurring inside solitary confinement units in the 1980s, ones that were traumatizing to witness as well as to experience directly:

> [B]eing "dragged out" meant that a person was dragged out of a cell feet first, with their head trailing behind on the floor, and often being beaten while being moved. I can still remember the screams, the wailing, the cursing, and the anger. These events were alarming because all who witnessed them unfold could feel the humiliation and shame. We in the cells were utterly powerless and could face a similar fate. There was nothing I could do, nothing anyone could do, except hope to get out of there alive. The possibility of being beaten was all too real. Whom could I tell? Who would listen? Who would care?[103]

Moreover, solitary confinement is virtually always accompanied by a host of additional deprivations that extend beyond the sheer lack of meaningful social contact. Those additional deprivations commonly include the lack of positive or pleasurable environmental stimulation in settings that prisoners are unable to significantly modify. That is, the physical environment in most solitary confinement units is characterized by its closed-in nature (in the cells, of course, but also in the cellblocks themselves) and unchanging drabness. As I have described them previously: "Inside their cells, units, and 'yards,'" prisoners in solitary confinement units "are surrounded by nothing but concrete, steel, cinderblock, and metal fencing—often gray or faded pastel, drab and sometimes peeling paint, dingy, worn floors. There is no time when they escape from these barren 'industrial' environments."[104] Indeed, many of these units are explicitly, often inventively, designed to limit or eliminate the prisoners' contact with nature—restricting or foreclosing exposure to natural light, grass, and even glimpses of the horizon or sky. There are even some units where prisoners cannot easily tell whether it is day or night.

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[102] *See* Erica Goode, *When Cell Door Opens, Tough Tactics and Risk*, N.Y. TIMES, July 29, 2014, at A1, A12; Erica Goode, *New Trial Sought in Death of Man Pulled from Cell*, N.Y. TIMES, Aug. 23, 2014, at A16.

[103] Mika'il DeVeaux, *The Trauma of the Incarceration Experience*, 48 HARV. C.R.-C.L. L. REV. 257, 273 (2013).

[104] Craig Haney, *A Culture of Harm: Taming the Dynamics of Cruelty in Supermax Prisons*, 35 CRIM. JUST. & BEHAV. 956, 968 (2008).

The only variations in sensory stimulation are typically auditory, but these too often come in the form of aversive, loud noises that, in addition to the banging of heavy metal doors, include pounding on walls and shouting or screaming at all hours of the day and night from other prisoners who may be mentally ill and/or suffering from the effects of isolation.[105]

In addition, solitary confinement virtually always entails severe restrictions on the amount and kind of personal property prisoners can possess. In many such units, they have limited access to electronic appliances (such as radios and televisions) or may be prohibited from having any, and are more severely restricted than other prisoners in terms of the commissary products they may purchase from the prison store and even in the already limited amount of reading material they can keep in their cells. Prisoners in solitary confinement also typically have limited or no access to meaningful activity or programming, either inside or outside their cells. Other than the few prisoners who are selected as "tier tenders"—to clean units and perhaps deliver mail to other prisoners—they are prohibited from working, receiving vocational training, taking in-person educational classes of any kind, or participating in hobby craft. Most solitary confinement units impose strict limits on access to telephones so that, in addition to limited numbers of noncontact visits, they are significantly cut off from the outside world.

Stuart Grassian has noted that the medical profession has long known that, even in hospital settings where patients go to receive caring treatment, greatly restricted access to social and environmental stimulation can have a "profoundly deleterious effect,"[106] including adversely impacting "patients in intensive care units, spinal patients immobilized by the need for prolonged

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[105] I have personally toured and inspected a number of solitary confinement units in which the noise was so loud that it was difficult to converse with persons standing nearby. On the other hand, some solitary confinement units do, in fact, approximate the near total sensory deprivation paradigm in operation in early experiments conducted on the subject—darkened cells, little or no sound, and so on. But they are relatively rare nowadays. More commonly in contemporary prisons, solitary confinement units subject prisoners to what has been termed "reduced environmental stimulation"—a term that acknowledges the fact that there is not *total* (or even nearly total) deprivation of sensory input of any kind, but that the meaningful, positive, stimulating aspects of the environment are lacking. Thus, prisoners in solitary confinement are exposed to a reduced and monotonous kind of sensory input—an extremely limited and repetitive perceptual and experiential sameness in the physical environment around them. In some other instances, they are subjected to a great deal of stimulation, but it is aversive or noxious in nature—loud noise, bright lights, foul smells—and they have little or no control over the exposure. In these cases, the reduction in their "environmental stimulation" refers to the lack of *positive* stimuli, despite being bombarded with aversive stimuli that are beyond their control. All of these different but nonetheless problematic sensory aspects of the experience can be harmful to normal, healthy psychological functioning.

[106] Stuart Grassian, *Neuropsychiatric Effects of Solitary Confinement*, *in* THE TRAUMA OF PSYCHOLOGICAL TORTURE 113, 114 (Almerindo E. Ojeda ed., 2008).

traction, and patients with impairment of their sensory apparatus (such as eye-patched or hearing impaired patients)."[107] Of course, prisoners are not placed in solitary confinement to receive treatment or be administered to in caring ways. Unlike social isolation in most free-world contexts, solitary confinement in jails and prisons is also "pejoratively imposed," in the sense that significant stigma and gratuitous humiliation are commonly associated with it. From the perspective of the staff at least, and in some instances the prisoners as well, a prisoner in solitary confinement is in an even more degraded status than a mainline prisoner. Prisoners who are placed in solitary confinement are sometimes referred to as the "worst of the worst," but they are virtually always treated as the "lowest of the low."[108] I have suggested elsewhere that prisoners in solitary confinement are enveloped in a "culture of harm" that includes not only the isolating architecture and procedures that characterize the environment, but also the "atmosphere of thinly veiled hostility and disdain [that] prevails."[109] Interactions with staff are "fraught with resentment and recrimination"[110] and an "ecology of cruelty" subjects

[107] *Id.* (citing Florence S. Downs, *Bed Rest and Sensory Disturbances*, 74 AM. J. NURSING 434 (1974); Rosemary Ellis, *Unusual Sensory and Thought Disturbances After Cardiac Surgery*, 72 AM. J. NURSING 2021 (1972); C. Wesley Jackson, Jr., *Clinical Sensory Deprivation: A Review of Hospitalized Eye-Surgery Patients*, *in* SENSORY DEPRIVATION: FIFTEEN YEARS OF RESEARCH (John P. Zubek ed., 1969); Donald S. Kornfeld, Sheldon Zimberg & James R. Malm, *Psychiatric Complications of Open-Heart Surgery*, 273 NEW ENG. J. MED. 287 (1965); Herbert R. Lazarus & Jerome H. Hagens, *Prevention of Psychosis Following Open-Heart Surgery*, 124 AM. J. PSYCHIATRY 1190 (1968); Eugene Ziskind, *Isolation Stress in Medical and Mental Illness*, 168 J. AM. MED. ASS'N 1427 (1958); Eugene Ziskind, Harold Jones, William Filante & Jack Goldberg, *Observations on Mental Symptoms in Eye Patched Patients: Hypnagogic Symptoms in Sensory Deprivation*, 116 AM. J. PSYCHIATRY 89 (1960)). Grassian also reported on early studies of the ways in which extreme social isolation and the deprivation of positive environmental stimulation could take a severe toll on persons in other contexts where they were voluntarily pursuing otherwise positive goals and activities, such as "extremely isolating military settings and explorations in land and space." *Id.* (citing A. M. Hastin Bennett, *Sensory Deprivation in Aviation*, *in* SENSORY DEPRIVATION 161 (Philip Solomon, Philip E. Kubzansky, P. Herbert Leiderman, Jack H. Mendelson, Richard Trumbull & Donald Wexler eds., 1961); Jeanette J. Cochrane & S.J.J. Freeman, *Working in Arctic and Sub-Arctic Conditions: Mental Health Issues*, 34 CANADIAN J. PSYCHIATRY 884 (1989); Sanford J. Freedman & Milton Greenblatt, *Studies in Human Isolation II: Hallucinations and Other Cognitive Findings*, 11 U.S. ARMED FORCES MED. J. 1479 (1960); E.K. Eric Gunderson, *Emotional Symptoms in Extremely Isolated Groups*, 9 ARCHIVES GEN. PSYCHIATRY 362 (1963); E.K. Eric Gunderson & Paul D. Nelson, *Adaptation of Small Groups to Extreme Environments*, 34 AEROSPACE MED. 1111 (1963)).

[108] Among the many "pains of imprisonment" to which prisoners in general are subjected, and that have the capacity to adversely affect them upon release, is the extent to which they are dehumanized, degraded, and disrespected. *See, e.g.*, James M. Binnall, *Respecting Beasts: The Dehumanizing Quality of the Modern Prison and an Unusual Model for Penal Reform*, 17 J.L. & POL'Y 161, 185–86 (2008). These aspects of prison life are greatly intensified in solitary confinement units.

[109] Haney, *supra* note 104, at 960.

[110] *Id.*

prisoners in solitary confinement to the implements of forceful subjugation, including "handcuffs, belly chains, leg irons, spit shields, strip cells, four-point restraints, canisters of pepper spray, batons, and rifles," often wielded by flak-jacketed, helmeted officers.[111]

Unlike socially isolated persons in free society, prisoners in solitary confinement are profoundly "alone" but, paradoxically, are afforded limited or no access to privacy. Among other things, they are subjected to unannounced, prolonged, and invasive visual inspections in a way that other prisoners are not. Since literally everything prisoners in solitary confinement "do" occurs within the small space of their cell (or, during brief periods of time when they have access to it, the "yard," where they are also carefully monitored), their surveillance far exceeds that of even mainline prisoners. The latter have at least some freedom of movement to enter limited prison spaces where they are not so closely observed. In extreme cases, prisoners in solitary confinement may have cameras trained on them literally all the time (and frequently do if they are placed in suicide or aptly named "watch" cells, where around-the-clock video monitoring is commonplace). In addition, the limited contact that prisoners in solitary confinement have with medical and mental health staff often takes place "cell front," so even otherwise highly sensitive conversations about physical or psychological vulnerabilities and personal concerns are susceptible to being "overheard" by custody staff and other prisoners. This helps explain why many prisoners in solitary confinement forego these contacts altogether. In any event, the constant surveillance and lack of privacy are additional toxic aspects of solitary confinement.[112]

The multiple dimensions of institutional control and surveillance and harsh contingencies that prevail inside jail and prison solitary confinement units not only produce natural human reactions and adaptations to the experience of social isolation and loneliness but also can set other dysfunctional and problematic dynamics in motion. These dynamics, in turn, may lead to even more painful and extended stays in solitary confinement. For example, several studies have found that the experience of loneliness leads naturally to hypervigilance about perceived social threats which, in

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[111] *Id.* at 970.

[112] Access to privacy is "important because it is posited to provide experiences that support normal psychological functioning, stable interpersonal relationships, and personal development." Stephen T. Margulis, *Privacy as a Social Issue and Behavioral Concept*, 59 J. SOC. ISSUES 243, 246 (2003); *see also* Darren Ellis, Ian Tucker & David Harper, *The Affective Atmospheres of Surveillance*, 23 THEORY & PSYCH. 716 (2017); Darhl M. Pedersen, *Psychological Functions of Privacy*, 17 J. ENVTL. PSYCH. 147 (1997).

turn, can produce overreactions to potentially threatening external stimuli.[113] This helps to explain why prisoners in solitary confinement are susceptible to a form of "institutional paranoia" in which they come to distrust literally everyone with whom they interact. This distrust may include not only prison personnel, but also extend to other prisoners whom they begin to suspect of harboring ill will or conspiring against them. Although entirely understandable under the circumstances in which it occurs—prisoners in solitary confinement have often said to me, only partly in jest, that "it isn't paranoia if people really *are* out to get you"—the adaptation of distrusting everyone and distancing oneself from them makes the social pain of solitary confinement more difficult for them to alleviate. Relatedly, researchers have found that loneliness reduces the amount of pleasure persons derive from rewarding social stimuli.[114] This means that even the extraordinarily rare forms of positive social stimulation that might occur in solitary confinement may have only limited beneficial or ameliorating effects because the effects of extreme isolation have numbed the prisoners' capacity to enjoy or benefit from it.

Thus, there are many reasons why the adverse psychological and physical effects of social isolation and exclusion and the deprivation of caring touch that occur in the course of solitary confinement in correctional settings are likely to be *far worse* than in society at large, where those effects have proven to be severe and even life-threatening.

III. THE EFFECTS OF SOLITARY CONFINEMENT ARE COMPOUNDED BY THE EFFECTS OF IMPRISONMENT PER SE

Although there is a well-settled scientific consensus over the harmfulness of solitary confinement, there are occasional outlier claims made that appear to unduly minimize the seriousness of the damage it does to prisoners. Typically voiced by persons who seem unaware of the much larger compelling body of scientific knowledge about the adverse effects of social isolation in society at large,[115] this seeming defense of the continued

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[113] *See, e.g.*, Munirah Bangee, Rebecca A. Harris, Nikola Bridges, Ken J. Rotenberg & Pamela Qualter, *Loneliness and Attention to Social Threat in Young Adults: Findings from an Eye Tracker Study*, 63 PERSONALITY & INDIVIDUAL DIFFERENCES 16, 22 (2014); Stephanie Cacioppo, Munirah Bangee, Stephen Balogh, Carlos Cardenas-Iniguez, Pamela Qualter & John T. Cacioppo, *Loneliness and Implicit Attention to Social Threat: A High-Performance Electrical Neuroimaging Study*, 7 COGNITIVE NEUROSCIENCE 138, 155–56 (2016).

[114] *See, e.g.*, John T. Cacioppo & Louise C. Hawkley, *Perceived Social Isolation and Cognition*, 13 TRENDS IN COGNITIVE SCI. 447, 449 (2009).

[115] Commentators such as Paul Gendreau and Ryan Labrecque who incorrectly describe solitary confinement as primarily "an environment with severe restrictions placed on auditory, visual and

use of solitary confinement takes several forms. In addition to the claim that I addressed in Part I (to the effect that "there is just not enough data to know"), some commentators have asserted that, although solitary confinement is potentially harmful, it inflicts only *de minimis* damage that, in any event, is likely to dissipate over time (i.e., upon release back to a mainline prison population or into free society). For example, meta-analysts Robert Morgan and his colleagues made a point of rejecting what they characterized as "fiery opinions" lodged by a number of knowledgeable experts against the practice of solitary confinement, accusing the scholars who voiced them of "lack[ing] a social perspective." The "social perspective" Morgan and his colleagues appeared to have in mind was their own claim that the effects of solitary confinement are no greater than the "adverse effects resulting from general incarceration."[116] They repeated the same assertion a page later in their article: "[T]he magnitude of the adverse effects of [solitary confinement] placement tend to be *small to moderate*, and no greater than the magnitude of effects for incarceration, generally speaking."[117]

Two other coauthors of the Morgan meta-analysis go even further, stating "there are no estimates of the precise magnitude of the effects of prison life, although we expect it is likely close to zero."[118] This same kind of minimization appears in sworn testimony given by some of the same authors, testifying as expert witnesses in defense of the use of solitary confinement in various jurisdictions, including in a case where prisoners were held continuously for at least ten years or more (some for more than

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kinesthetic stimulation" but make little or no mention of the social deprivation that is its essence have badly missed the point. Paul Gendreau & Ryan M. Labrecque, *The Effects of Administrative Segregation: A Lesson in Knowledge Cumulation*, *in* THE OXFORD HANDBOOK OF PRISONS AND IMPRISONMENT 340, 340 (John Wooldredge & Paula Smith eds., 2018). Solitary confinement is harmful primarily because it deprives prisoners of meaningful social contact; the deprivation of positive environmental stimulation exacerbates those effects, but it is not the primary source of the harm. Thus, despite noble calls to "search for convergent validity from diverse empirical and theoretical literatures," they have completely ignored the most relevant literature of all—that which documents the extremely deleterious effects of social deprivation. *Id.* at 342.

[116] Robert D. Morgan, Paul Gendreau, Paula Smith, Andrew L. Gray, Ryan M. Labrecque, Nina MacLean, Stephanie A. Van Horn, Angelea D. Bolanos & Ashley B. Batastini, *Quantitative Syntheses of the Effects of Administrative Segregation on Inmates' Well-Being*, 22 PSYCHOL., PUB. POL'Y, & L. 439, 455 (2016).

[117] *Id.* at 456 (emphasis added).

[118] Gendreau & Labrecque, *supra* note 115, at 343. They argued further that, if there are any effects of prison life ("close to zero"), it is "criminogenic outcomes" rather than psychological disability that is "the most adverse outcome of incarceration." *Id.* at 344. In fact, current research indicates that the adverse effects are a great deal more than "zero" and extend well beyond criminogenic outcomes.

twenty years).[119] The point of these and similar statements appears to be to implicitly minimize the suffering and harm "from segregation" by suggesting that the amount is "no more than" or "comparable to" the suffering and harm that prison life in general inflicts, which the defenders of solitary confinement allege are "mild to moderate." By characterizing the negative effects of prison in general as *de minimis* (indeed, "close to zero"), and the harmfulness of solitary confinement as "no more than that," they seem to imply that there is relatively little reason for concern.[120]

In fact, however, if we were to assume that the suffering and harm inflicted by solitary confinement are actually "comparable to" or "no more than" the suffering and harm brought about by incarceration generally, then there would still be *grave* cause for concern. That is because what are commonly described as the "pains of imprisonment" are now well understood to have a powerful psychological and even physical impact. The negative effects are well documented and often truly severe.[121] As I will

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[119] Robert Morgan, the first author of the aforementioned meta-analysis, has made this exact point in several cases in which he has offered such testimony. For example: "Thus, it is my opinion that the mental health concerns experienced by inmates in the SHU are not time dependent (i.e., 2 years, 5 years, 10 years, 20 years) such that inmates serving 10 or more years in the PBSP SHU are no better or worse off, from a clinical mental health perspective, than if they served less than 10 years of SHU confinement." Expert Report by Dr. Robert Morgan at 12, Ashker v. Brown, No. C 09-05796 CW (N.D. Cal. Mar. 13, 2015).

[120] Defenders of solitary confinement also sometimes point to the fact that a sizable minority of prisoners in some prison systems seem to "prefer" solitary confinement to mainline prison housing because the prisoners sometimes request placement in so-called "protective custody," "safekeeping," or "sensitive needs" housing units that may operate as de facto solitary confinement units. The problem with this assertion is that it overlooks the terrible Hobson's choice with which such prisoners are confronted, namely, whether or not to attempt to preserve their physical well-being at the expense of their mental health. Because physical threats in prison are often dire, tangible, and imminent, it is not surprising that some prisoners assume (or gamble) that they may be able to psychologically withstand the rigors of solitary confinement while protecting themselves from violent victimization. Some miscalculate and suffer significant psychological pain or worse. *See, e.g.*, Stanley L. Brodsky & Forrest R. Scogin, *Inmates in Protective Custody: First Data on Emotional Effects*, 1 FORENSIC REP. 267, 269–70 (1988). Kimberley Brownlee has argued in this context that the notion of "voluntary self-isolation" should be regarded with great skepticism because, as she noted, "'voluntariness' depends on the range and value of the choices available." Brownlee, *supra* note 8, at 206. Moreover, "[i]f a person's principal forms of social interaction are hostile, degrading, or cruel, then she may voluntarily withdrawal from that social environment but, given the context, her decision will not differ much from a non-voluntary withdrawal." *Id.* The prisoners' "preferences" in these cases are more a reflection of the terrible mainline prison conditions and forms of treatment from which they are fleeing than the benign nature of the solitary confinement units they have been compelled to enter.

[121] Much of this evidence is summarized in several book-length treatments of the topic. *See, e.g.*, CRAIG HANEY, REFORMING PUNISHMENT: PSYCHOLOGICAL LIMITS TO THE PAINS OF IMPRISONMENT (2006) [hereinafter HANEY, REFORMING PUNISHMENT]; COMM. ON CAUSES & CONSEQUENCES OF HIGH RATES OF INCARCERATION, NAT'L RES. COUNCIL OF THE NAT'L ACADS., THE GROWTH OF INCARCERATION IN THE UNITED STATES: EXPLORING CAUSES AND CONSEQUENCES (Jeremy Travis,

discuss in more detail below, although some of the effects of general incarceration do not fully manifest themselves until after prisoners are released from prison, the adverse consequences of imprisonment are substantial and can be life altering. They are hardly "small to moderate" or "close to zero."

For example, Alison Liebling and her colleagues reported that the measured levels of distress in eleven of the twelve prisons they studied were "extraordinarily high" and above the threshold that ordinarily triggers an inquiry into whether a patient is suffering from a treatable emotional or psychological illness.[122] Reviews of the literature on the prevalence of post-traumatic stress disorder (PTSD) and interrelated trauma-based symptoms that include depression, emotional numbing, anxiety, isolation, and hypervigilance among prisoners suggest that this disorder may occur as much as ten times more often than in the general population.[123] The severity of environmental stress to which prisoners are exposed significantly affects the levels of anxiety and depression that they experience during confinement.[124] In addition, Jason Schnittker and his colleagues have shown

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Bruce Western & Steve Redburn eds., 2014); THE EFFECTS OF IMPRISONMENT (Alison Liebling & Shadd Maruna eds., 2005). In addition, there are numerous empirical studies and published reviews of the available literature. *See, e.g.*, Craig Haney, *Prison Effects in the Era of Mass Incarceration*, 20 PRISON J. 1 (2012) [hereinafter Haney, *Prison Effects*]; Diana Johns, *Confronting the Disabling Effects of Imprisonment: Toward Prehabilitation*, 45 SOC. JUST. 27 (2018).

[122] Alison Liebling, Linda Durie, Annick Stiles & Sarah Tait, *Revisiting Prison Suicide: The Role of Fairness and Distress*, *in* THE EFFECTS OF IMPRISONMENT, *supra* note 121, at 216.

[123] Although the orders of magnitude vary as a function of the different prevalence estimates for both the general and incarcerated populations, no researchers doubt that "inmate rates of PTSD are substantially higher than rates in the general population." Laura E. Gibson, John C. Holt, Karen M. Fondacaro, Tricia S. Tang, Thomas A. Powell & Erin L. Turbitt, *An Examination of Antecedent Traumas and Psychiatric Comorbidity Among Male Inmates with PTSD*, 12 J. TRAUMATIC STRESS 473, 474 (1999); *see also* Ashley Goff, Emmeline Rose, Suzanna Rose & David Purves, *Does PTSD Occur in Sentenced Prison Populations? A Systematic Literature Review*, 17 CRIM. BEHAV. & MENTAL HEALTH 152 (2007); Carolyn J. Heckman, Karen L. Cropsey & Tawana Olds-Davis, *Posttraumatic Stress Disorder Treatment in Correctional Settings: A Brief Review of the Empirical Literature and Suggestions for Future Research*, 44 PSYCHOTHERAPY: THEORY, RES., PRAC., TRAINING 46 (2007); Nancy Wolff, Jessica Huening, Jing Shi & B. Christopher Frueh, *Trauma Exposure and Posttraumatic Stress Disorder Among Incarcerated Men*, 91 J. URB. HEALTH 707 (2014). A recent international meta-analysis of the prevalence of PTSD among prisoners estimated it to be five times greater among imprisoned men and eight times greater among imprisoned women than in the general population. Gergo Baranyi, Megan Cassidy, Seena Fazel, Stefan Priebe & Adrian P. Mundt, *Prevalence of Posttraumatic Stress Disorder in Prisoners*, 40 EPIDEMIOLOGIC REV. 134, 142 (2018).

[124] *See, e.g.*, Colin Cooper & Sinéad Berwick, *Factors Affecting Psychological Well-Being of Three Groups of Suicide-Prone Prisoners*, 20 CURRENT PSYCHOL. 169 (2001). It is important to be reminded exactly what such stress consists of. For example, noting that "[n]o one leaves unscarred," Mika'il DeVeaux has provided a powerful firsthand account of the traumatic nature of the prison life he experienced, one whose aftereffects he still struggled to overcome long after his release: "I found the

that many of these psychiatric symptoms (especially anxiety- and depression-related disorders) persist long after release and represent significant obstacles to successful reentry.[125]

Moreover, the experience of imprisonment is so stressful that it adversely affects prisoners' physical health. Having been in prison can increase rates of morbidity, especially the likelihood of contracting infectious and stress-related illnesses.[126] It also affects mortality rates.[127] In fact, Evelyn Patterson's study of persons released from prison in New York State concluded that each year spent in prison reduced a person's life span by two years.[128] As I noted, many of the adverse effects on physical and mental health are long-lasting, persisting well beyond a person's time in prison.[129]

Thus, the assertion that incarceration in general produces only "small to moderate" negative effects is flatly incorrect. In this context, however, it

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prison experience traumatic because of the assaults and murders I witnessed while incarcerated, because of the constant threat of violence, because of the number of suicides that took place, and because I felt utterly helpless about the degree to which I could protect myself." DeVeaux, *supra* note 103, at 257, 264–65.

[125] Jason Schnittker, *The Psychological Dimensions and the Social Consequences of Incarceration*, 651 ANNALS AM. ACAD. POL. & SOC. SCI. 122, 135–36 (2014); Kristin Turney, Christopher Wildeman & Jason Schnittker, *As Fathers and Felons: Explaining the Effects of Current and Recent Incarceration on Major Depression*, 53 J. HEALTH & SOC. BEHAV. 465, 466 (2012); *see also* Shelley Johnson Listwan, Mark Colvin, Dena Hanley & Daniel Flannery, *Victimization, Social Support, and Psychological Well-Being: A Study of Recently Released Prisoners*, 37 CRIM. JUST. & BEHAV. 1140 (2010).

[126] *See, e.g.*, Michael Massoglia & Brianna Remster, *Linkages Between Incarceration and Health*, 134 PUB. HEALTH REPS. 8S, 10S (2019) (Supplement I); Michael Massoglia, *Incarceration as Exposure: The Prison, Infectious Disease, and Other Stress-Related Illnesses*, 49 J. HEALTH & SOC. BEHAV. 56, 57 (2008).

[127] *See, e.g.*, Ingrid A. Binswanger, Marc F. Stern, Richard A. Deyo, Patrick J. Heagerty, Allen Cheadle, Joann G. Elmore & Thomas D. Koepsell, *Release from Prison—A High Risk of Death for Former Inmates*, 356 NEW ENG. J. MED. 157, 159–61 (2007).

[128] Evelyn J. Patterson, *The Dose-Response of Time Served in Prison on Mortality: New York State, 1989–2003*, 103 AM. J. PUB. HEALTH 523, 523 (2013) [hereinafter Patterson, *The Dose-Response of Time Served in Prison on Mortality*].

[129] *See, e.g.*, Paul C. Archibald, *Criminal Justice Contact, Stressors, and Depressive Symptoms Among Black Adults in the United States*, 43 AM. J. CRIM. JUST. 486, 488 (2018); Shervin Assari, Reuben Jonathan Miller, Robert Joseph Taylor, Dawne Mouzon, Verna Keith & Linda M. Chatters, *Discrimination Fully Mediates the Effects of Incarceration History on Depressive Symptoms and Psychological Distress Among African American Men*, 5 J. RACIAL & ETHNIC HEALTH DISPARITIES 243, 246 (2018); Robynn Cox, *Mass Incarceration, Racial Disparities in Health, and Successful Aging*, 42 J. AM. SOC'Y ON AGING 48, 51 (2018); Adrian Grounds & Ruth Jamieson, *No Sense of an Ending: Researching the Experience of Imprisonment and Release Among Republican Ex-Prisoners*, 7 THEORETICAL CRIMINOLOGY 347, 351, 354–56 (2003); Yujin Kim, *The Effect of Incarceration on Midlife Health: A Life-Course Approach*, 34 POPULATION RES. POL'Y REV. 827, 829 (2015); Turney et al., *supra* note 125, at 466; Tomoko Udo, *Chronic Medical Conditions in U.S. Adults with Incarceration History*, 38 HEALTH PSYCHOL. 217, 217–18 (2019).

is important to keep in mind that whether or not the adverse effects of solitary confinement are nearly equal to or perhaps much greater than the effects of incarceration generally, they are experienced in addition to the baseline effects of imprisonment. In this way, the harmfulness of solitary confinement represents an *increment* of suffering and harm that is always incurred above and beyond the deleterious effects of imprisonment per se, which are already experienced by prisoners who are, by definition, already incarcerated at the time they are placed in solitary confinement.

This fact was underscored by a study I conducted several years ago at Pelican Bay State Prison, comparing the number and intensity of symptoms of psychological stress, trauma, and isolation-related psychopathology between a sample of long-term isolated prisoners and a sample of long-term general population prisoners.[130] I used a structured interview and systematic assessment format to identify the symptoms they were experiencing and selected the sample participants randomly to ensure their representativeness (except that I explicitly excluded persons suffering from diagnosed mental health problems at the time the study was conducted).[131] Because of the harshness of the mainline maximum security prison from which the general population prisoners were drawn—which a number of them described as "the worst" they had ever been in—the comparison between the groups represented an especially stringent test of the effects of long-term solitary confinement.[132] An additional factor that added to the stringency of this

[130] The isolated prisoners had spent ten years or more in continuous solitary confinement at the Pelican Bay Security Housing Unit, and they were compared to the general population prisoners (then housed at the Pelican Bay maximum-security mainline prison) who had spent ten years or more in continuous imprisonment. All of the prisoners in both groups were otherwise mentally healthy; that is, no one from either group was currently on the prison system's mental health caseload. The details of this study are described in Haney, *Restricting Solitary Confinement*, *supra* note 8, at 291–92, and Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 134–38.

[131] Largely as a result of a federal court decision, no prisoner on the California Department of Corrections and Rehabilitation's mental health caseload was permitted to be housed in the solitary confinement facility at Pelican Bay. Madrid v. Gomez, 889 F. Supp. 1146 (N.D. Cal. 1995). To ensure comparability of the samples in this respect, no long-term general population prisoner currently on the mental health caseload was included in the study.

[132] The conditions of confinement in the maximum-security prison from which the general population prisoners were selected were severe. They were virtually all double-celled inside standard general population cells, were "cell fed" (i.e., they ate all of their meals in their cells rather than in a common dining hall), had very limited "out-of-cell time," could obtain access to only a restricted number of "jobs" (e.g., working in the kitchen, barber shop, or serving as a tier tender), and could enroll in only a single educational class. In addition, because the general population facility was located in the same geographically remote location as the solitary confinement facility, general population prisoners, like their solitary confinement counterparts, also tended to have relatively few visitors. However, unlike the solitary confinement prisoners, those in general population were allowed to congregate through "dayroom" time, outdoor group exercise, and to have contact visits. *See* Haney, *Restricting Solitary*

comparison was the fact that many general population prisoners had themselves spent long periods (for some, years) confined in one or another solitary confinement unit before their current nonsolitary housing assignment. For some of them, this included previously having spent time in the Pelican Bay solitary confinement unit under study.[133]

Given the severity of the overall conditions to which both groups of prisoners were subjected, it was not surprising to learn they all acknowledged some degree of suffering and distress. Yet there was absolutely no comparison in the levels reported by the general population versus isolated prisoners. On nearly every single specific dimension measured, the prisoners currently in solitary confinement were in significantly more pain, were more traumatized and stressed, and manifested far more isolation-related pathological reactions. Thus, they not only reported experiencing significantly more stress and trauma-related symptoms[134] and significantly more isolation-related indices of pathology,[135] but the orders of magnitude were quite large. The isolated prisoners reported nearly twice as many symptoms overall as compared to those in the general population.

In addition to determining the presence or absence of a symptom, I also asked prisoners to estimate the frequency with which they had been bothered by these symptoms over approximately the last three-month period (as a way of gauging intensity or the degree to which they suffered from the particular symptom or underlying problem).[136] With the exception of headaches, which were reported at reasonably high levels of intensity for both groups, the only symptoms on which there were no significant differences between the solitary confinement and general population prisoners pertained almost exclusively to symptoms that were reported very infrequently by both groups (e.g., fainting, suicidality). In fact, the mean intensities of the reported

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Confinement, *supra* note 8, at 291–92; Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 134–38.

[133] Many of the general population prisoners who had been in solitary confinement in the past acknowledged the lasting aftereffects of isolation. Some attributed at least some of the problems and symptoms that they were currently experiencing to the time that they had spent in solitary confinement and acknowledged struggling to overcome these effects (including impaired social relations and persistent feelings of loneliness) once released from isolation. *See* Haney, *Restricting Solitary Confinement*, *supra* note 8, at 291–92; Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 134–38.

[134] These symptoms included experiencing anxiety, lethargy, troubled sleep, heart palpitations, and a sense of impending breakdown. *See* Haney, *Restricting Solitary Confinement*, *supra* note 8, at 291–93.

[135] These symptoms included depression, uncontrolled ruminations, impaired thought processes, and social withdrawal. *Id.*

[136] Prisoners who reported suffering from a symptom were asked whether they experienced it rarely, sometimes, often, or constantly. *Id.*

symptoms were not only significantly different between the groups, but also nearly or more than double for the prisoners in solitary confinement as compared to those prisoners housed in general population.

It is also important to note that the painful, traumatic, and harmful experience of imprisonment is endured by many persons who have suffered a disproportionate number of adverse experiences *before* incarceration. They are thus especially vulnerable to the "retraumatization" of prison.[137] As Cherie Armour summarized: "[P]re-existing traumatic experiences are common in both male and female prisoners which are further exacerbated by traumas experienced within prison."[138] The same can be said of prisoners confined in solitary confinement, who are traumatized yet again by the added stress and deprivation imposed by social isolation.[139]

IV. THE LEGACY OF SOLITARY CONFINEMENT: THE PERSISTENCE OF ISOLATION EFFECTS

Another way to minimize the harmfulness of solitary confinement is to assume that, however unpleasant the experience may be, its effects will dissipate over time once a prisoner is moved to a different and better setting, either into a mainline prison or through release back to free society. Thus, apologists for the practice argue "the effects of [solitary] confinement are

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[137] For a discussion of the role of preprison risk factors and traumas in the etiology of criminal behavior that can lead to imprisonment, see Craig Haney, CRIMINALITY IN CONTEXT: THE PSYCHOLOGICAL FOUNDATIONS OF CRIMINAL JUSTICE REFORM (2020).

[138] Cherie Armour, *Mental Health in Prison: A Trauma Perspective on Importation and Deprivation*, 5 INT'L J. CRIMINOLOGY & SOC. THEORY 886, 891 (2012); *see also* Andy Hochstetler, Daniel S. Murphy & Ronald L. Simons, *Damaged Goods: Exploring Predictors of Distress in Prison Inmates*, 50 CRIME & DELINQ. 436 (2004) (finding that there were significant interrelationships between preprison and prison trauma that had lasting postprison effects); Alison Liebling, *Vulnerability and Prison Suicide*, 35 BRIT. J. CRIMINOLOGY 173 (1995); Benjamin Meade & Benjamin Steiner, *The Effects of Exposure to Violence on Inmate Maladjustment*, 40 CRIM. JUST. & BEHAV. 1228, 1230 (2013) (finding that exposure to various forms of violence before incarceration adversely affects adjustment to prison); Merry Morash, Seokjin Jeong, Miriam Northcutt Bohmert & Daniel R. Bush, *Men's Vulnerability to Prisoner-on-Prisoner Violence: A State Correctional System Case Study*, 92 PRISON J. 290, 299–304 (2012) (finding that the strongest predictor of whether a male prisoner was sexually victimized in prison was having had a history of childhood sexual abuse).

[139] Not surprisingly, the stressfulness of prison life in general and solitary confinement in particular impacts persons with preexisting vulnerabilities even more acutely and can lead to heightened levels of suicidality. *See, e.g.*, Ronald L. Bonner, *Stressful Segregation Housing and Psychosocial Vulnerability in Prison Suicide Ideators*, 36 SUICIDE & LIFE-THREATENING BEHAV. 250, 252 (2006); Eric Lanes, *The Association of Administrative Segregation and Other Risk Factors with the Self-Injury-Free Time of Male Prisoners*, 48 J. OFFENDER REHABILITATION 529, 533 (2009); Raymond F. Patterson & Kerry Hughes, *Review of Completed Suicides in the California Department of Corrections and Rehabilitation, 1999 to 2004*, 59 PSYCHIATRIC SERVS. 676, 677–78 (2008).

negative but do not produce 'lasting emotional damage.'"[140] Unfortunately, this misapprehends the nature of prison effects generally and the effects of solitary confinement more specifically. Some of the worst effects of incarceration derive from the forced accommodations prisoners must make to the atypical and dehumanizing nature of prison life. Sometimes termed "prisonization," the necessary adaptations to the pains of imprisonment require prisoners to undergo a series of psychological changes that are often difficult to relinquish upon release, when these habits and ways of being are no longer needed or even functional. They represent the psychic aftereffects of incarceration that may significantly interfere with successful reintegration into the world outside prison.[141] This is especially true when formerly incarcerated persons enter free society without proper preparation or ongoing transitional services designed to help them traverse the psychological, social, and economic barriers they are likely to confront.

In fact, as implied by my discussion of the impact of imprisonment per se in Part III, there is now extensive research documenting the long-lasting consequences of incarceration, ones that can undermine a formerly incarcerated person's quality of life. They contribute to the difficulties many face in attempting to avoid a return to prison, as well as in ensuring their physical and mental health and enabling them to become contributing members of society. Some of the lasting effects of time spent in prison impact formerly incarcerated persons directly on a personal and psychological level.[142] Other adverse effects impair the nature and stability of the relationships that formerly incarcerated persons are able to initiate and maintain.[143] Still others relate directly to the negative health consequences

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[140] Gendreau & Labrecque, *supra* note 115, at 350 (taking issue with the contrary observation of psychiatrist Terry Kupers).

[141] *See, e.g.*, STEPHEN J. BAHR, RETURNING HOME: REINTEGRATION AFTER PRISON OR JAIL (2015); Craig Haney, *The Psychological Impact of Incarceration: Implications for Postprison Adjustment* [hereinafter Haney, *The Psychological Impact of Incarceration*], *in* PRISONERS ONCE REMOVED: THE IMPACT OF INCARCERATION AND REENTRY ON CHILDREN, FAMILIES, AND COMMUNITIES 33 (Jeremy Travis & Michelle Waul eds., 2003); Christy A. Visher & Jeremy Travis, *Transitions from Prison to Community: Understanding Individual Pathways*, 29 ANN. REV. SOC. 89 (2003).

[142] *See, e.g.*, HANEY, REFORMING PUNISHMENT, *supra* note 121; Haney, *Prison Effects*, *supra* note 121; Haney, *The Psychological Impact of Incarceration*, *supra* note 141; Michael Massoglia & William Alex Pridemore, *Incarceration and Health*, 41 ANN. REV. SOC. 291, 293 (2015); Schnittker, *supra* note 125; Turney et al., *supra* note 125, at 466.

[143] *See, e.g.*, Holly Foster & John Hagan, *Supportive Ties in the Lives of Incarcerated Women: Gender, Race/Ethnicity, and Children's Human Rights*, 17 J. GENDER RACE & JUST. 257, 258 (2014); Michael Massoglia & Cody Warner, *The Consequences of Incarceration: Challenges for Scientifically Informed and Policy-Relevant Research*, 10 CRIMINOLOGY & PUB. POL'Y 851, 853 (2011); Kristin Turney, *Hopelessly Devoted? Relationship Quality During and After Incarceration*, 77 J. MARRIAGE &

that compromise their physical well-being.[144] They combine with the social stigma and diminished employment opportunities and other "collateral consequences"[145] of having been imprisoned to create substantial barriers to reintegration and long-term well-being. For example, Sebastian Daza and his colleagues provided a stark summary of the results of their long-term, nationwide study of this issue, stating that they "estimate that incarceration's adult mortality excess translates into a loss of between four and five years of life expectancy at age 40" and that at least some of the "gap in mortality between the United States and peer countries" seems to be attributable to this nation's "differential imprisonment experiences."[146]

Bruce Western and his colleagues have chronicled the numerous structural challenges that formerly incarcerated persons face upon their release from prison. Under the best of circumstances, this stressful transition involves the "anxiety of adjusting to social interaction in a free society under conditions of severe material deprivation."[147] Except in the most carefully implemented reentry programs, however, many who are released from prison are left to navigate these challenges on their own with minimal governmental or outside assistance. Alessandro De Giorgi's compelling narrative of the plight of many formerly incarcerated persons describes them as not only forced to grapple with the stigma of incarceration, but also "scrambling to disentangle themselves from the treacherous grips of chronic poverty, sudden homelessness, untreated physical and mental suffering, and the lack of meaningful social services."[148] There is reason to believe that time spent

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FAM. 480, 480–81 (2015); Christopher Wildeman, *Parental Imprisonment, the Prison Boom, and the Concentration of Childhood Disadvantage*, 46 DEMOGRAPHY 265, 266 (2009).

[144] *See, e.g.*, Valerio Baćak & Christopher Wildeman, *An Empirical Assessment of the "Healthy Prisoner Hypothesis,"* 138 SOC. SCI. & MED. 187 (2015); Binswanger et al., *supra* note 127, at 159–61; Massoglia, *supra* note 126, at 57; Evelyn J. Patterson, *Incarcerating Death: Mortality in U.S. State Correctional Facilities, 1985–1998*, 47 DEMOGRAPHY 587, 601 (2010); Patterson, *The Dose-Response of Time Served in Prison on Mortality*, *supra* note 128, at 523; David L. Rosen, Victor J. Schoenbach & David A. Wohl, *All-Cause and Cause-Specific Mortality Among Men Released from State Prison, 1980–2005*, 98 AM. J. PUB. HEALTH 2278, 2278 (2008); Jason Schnittker & Andrea John, *Enduring Stigma: The Long-Term Effects of Incarceration on Health*, 48 J. HEALTH & SOC. BEHAV. 115, 115–16 (2007).

[145] *See, e.g.*, INVISIBLE PUNISHMENT: THE COLLATERAL CONSEQUENCES OF MASS INCARCERATION (Marc Mauer & Meda Chesney-Lind eds., 2002); Gabriel J. Chin, *The New Civil Death: Rethinking Punishment in the Era of Mass Incarceration*, 160 U. PA. L. REV. 1789 (2012).

[146] Sebastian Daza, Alberto Palloni & Jerrett Jones, *The Consequences of Incarceration for Mortality in the United States*, 57 DEMOGRAPHY 577, 591–92 (2020).

[147] Bruce Western, Anthony A. Braga, Jaclyn Davis & Catherine Sirois, *Stress and Hardship After Prison*, 120 AM. J. SOC. 1512, 1514 (2015).

[148] Alessandro De Giorgi, *Back to Nothing: Prisoner Reentry and Neoliberal Neglect*, 44 SOC. JUST. 83, 88 (2017).

in solitary confinement increases the difficulty of successfully overcoming these barriers.

Although data are mixed on whether time spent in solitary confinement specifically increases postprison criminal behavior (beyond the criminogenic effects of incarceration per se), it surely does not decrease it.[149] Here, too, a more meaningful measure of the extent of long-lasting damage incurred by solitary confinement is the quality of life that prisoners who endured it are able to manage once released.[150] There is evidence that they encounter more serious obstacles to successful reintegration back into free society, and that there are few if any specific programs available that acknowledge their solitary-confinement-related traumas and assist them in overcoming the psychological aftereffects.[151] Solitary confinement survivors suffer postprison adjustment problems at higher rates than the already high rates

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[149] *See, e.g.*, H. Daniel Butler, Benjamin Steiner, Matthew D. Makarios & Lawrence F. Travis III, *Assessing the Effects of Exposure to Supermax Confinement on Offender Postrelease Behaviors*, 97 PRISON J. 275, 277–80 (2017); David Lovell, L. Clark Johnson & Kevin C. Cain, *Recidivism of Supermax Prisoners in Washington State*, 53 CRIME & DELINQ. 633, 643–49 (2007); Daniel P. Mears & William D. Bales, *Supermax Incarceration and Recidivism*, 47 CRIMINOLOGY 1131, 1151 (2009); Laurence L. Motiuk & Kelley Blanchette, *Characteristics of Administratively Segregated Offenders in Federal Corrections*, 41 CANADIAN J. CRIMINOLOGY 131, 139–40 (2001); Youngki Woo, Laurie Drapela, Michael Campagna, Mary K. Stohr, Zachary K. Hamilton, Xiaohan Mei & Elizabeth Thompson Tollefsbol, *Disciplinary Segregation's Effects on Inmate Behavior: Institutional and Community Outcomes*, CRIM. JUST. POL'Y REV. 1, 11–14 (2019). The most recent study on this issue concluded that, in comparison to a matched sample of formerly incarcerated persons who had not been housed in solitary confinement during their prison term, solitary confinement survivors suffered "*higher post-release recidivism, proportionately more new commitments for all crime types, and shorter time to rearrest*." Kristen M. Zgoba, Jesenia M. Pizarro & Laura M. Salerno, *Assessing the Impact of Restrictive Housing on Inmate Post-Release Criminal Behavior*, 45 AM. J. CRIM. JUST. 102, 118 (2020) (emphasis in original).

[150] Most research on the effects of solitary confinement on subsequent in-prison behavior (i.e., in the mainline housing units to which prisoners are returned to serve the remainder of their prison sentences) has focused narrowly on disciplinary infractions. *See e.g.*, Justine A. Medrano, Turgut Ozkan & Robert Morris, *Solitary Confinement Exposure and Capital Inmate Misconduct*, 42 AM. J. CRIM. JUST. 863, 864 (2017); Robert G. Morris, *Exploring the Effect of Exposure to Short-Term Solitary Confinement Among Violent Prison Inmates*, 32 J. QUANTITATIVE CRIMINOLOGY 1, 2 (2016). More broadly, however, a group of Stanford researchers found that behavioral patterns and psychological reactions developed in the course of adapting to solitary confinement were persistent and problematic when formerly long-term isolated prisoners attempted to transition back to mainline prison housing. *See* HUMAN RIGHTS IN TRAUMA MENTAL HEALTH LAB, STANFORD UNIV., MENTAL HEALTH CONSEQUENCES FOLLOWING RELEASE FROM LONG-TERM SOLITARY CONFINEMENT IN CALIFORNIA 10 (2017), https://ccrjustice.org/sites/default/files/attach/2018/04/CCR_StanfordLab-SHUReport.pdf [https://perma.cc/5WGK-UBBN]. Psychiatrist Terry Kupers, who has written extensively about the mental health risks of solitary confinement, has termed the lingering effects of the experience "SHU postrelease syndrome." *See* TERRY ALLEN KUPERS, SOLITARY: THE INSIDE STORY OF SUPERMAX ISOLATION AND HOW WE CAN ABOLISH IT 151–67 (2017).

[151] *See, e.g.*, Daniel Pforte, *Evaluating and Intervening in the Trauma of Solitary Confinement: A Social Work Perspective*, 48 CLINICAL SOC. WORK J. 77, 85 (2020).

experienced by formerly incarcerated persons in general, including being more likely to manifest symptoms of PTSD.[152] In addition, as Lauren Brinkley-Rubinstein and her colleagues reported, formerly incarcerated persons who had spent time in solitary confinement were significantly more likely than other former prisoners to die during their first year of community reentry, especially from suicide, homicide, and opioid abuse.[153]

Western and his colleagues have emphasized the critical role played by "social integration"—not just finding a stable residence and obtaining gainful employment, but also "establishing community belonging"—in facilitating postprison adjustment.[154] They also acknowledged the critical importance of family ties "in normalizing the lives of those coming out of prison."[155] Yet these are precisely the things that time spent in solitary confinement can directly impede. The barriers that are routinely placed on access to telephones and visitation for prisoners in solitary confinement (special procedures and limited times), and the typically impersonal, noncontact nature of the visits (that must often take place "through glass and over phones") interfere with ongoing communication and contact; they serve as significant obstacles to the preservation of meaningful social relationships, beyond those typically encountered by prisoners in general.

In addition, prisoners in solitary confinement are often forced to adopt a range of necessary but ultimately problematic survival strategies. Although they are normal reactions adopted in response to the abnormal social deprivation of solitary confinement, they represent "social pathologies"—learning to live in the absence of others—that can impede subsequent social adjustment. As I have previously described them, these adaptations transcend the immediate and specific indices of pain and suffering that are reflected in studies of the effects of solitary confinement and involve significant changes in prisoners' relationships with others and even with

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[152] *See e.g.*, Brian O. Hagan, Emily A. Wang, Jenerius A. Aminawung, Carmen E. Albizu-Garcia, Nickolas Zaller, Sylviah Nyamu, Shira Shavit, Joseph Deluca & Aaron D. Fox, *History of Solitary Confinement Is Associated with Post-Traumatic Stress Disorder Symptoms Among Individuals Recently Released from Prison*, 95 J. URB. HEALTH 141, 146 (2018).

[153] Lauren Brinkley-Rubinstein, Josie Sivaraman, David L. Rosen, David H. Cloud, Gary Junker, Scott Proescholdbell, Meghan E. Shanahan & Shabbar I. Ranapurwala, *Association of Restrictive Housing During Incarceration with Mortality After Release*, JAMA NETWORK OPEN, Oct. 2019, https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2752350 [https://perma.cc/6NDF-NQY2]; *see also* Christopher Wildeman & Lars Andersen, *Solitary Confinement Placement and Post-Release Mortality Among Formerly Incarcerated Individuals: A Population-Based Study*, 5 LANCET PUB. HEALTH e107 (2020).

[154] Western et al., *supra* note 147, at 1515.

[155] *Id.*

themselves.[156] Prisoners in solitary confinement are forced into even greater levels of dependency on institutional structures than those in mainline prisons because there is so much less they are allowed to "do" for themselves. The forced asociality they endure can undermine their sense of self, placing them "literally at risk of losing their grasp on who they are," as well as eventually "becom[ing] increasingly unfamiliar and uncomfortable with social interaction."[157] If and when this happens, it will become increasingly difficult for them to undertake the task of social integration that Western and others have identified as crucial to the successful reintegration. Moreover, if the experience of solitary confinement places them at greater risk of remaining at the margins of social life after prison, they are ironically and painfully more likely to incur what we now know are the harmful effects of social isolation and loneliness that befall others in free society.

There is one additional issue that increases the potentially long-lasting negative effects of time spent in solitary confinement—the disproportionate number of mentally ill prisoners who are still being placed there by some prison systems.[158] The explanations for this unfortunate fact are multifaceted and difficult to completely disentangle. For one, persons with mental illness are at greater risk of committing disciplinary infractions and, in prisons that do not properly take their mental health conditions into account, they may be placed in solitary confinement as a result. In addition, some prisoners without preexisting mental health problems may develop them there, while others with underlying but undetected psychological disorders or vulnerabilities may have their conditions greatly exacerbated under the extraordinary stress of isolated confinement. Whatever the origins of their mental health symptoms and problems, these prisoners are all uniquely vulnerable to the harmful effects of solitary confinement. Their heightened vulnerability is precisely why many legal, human rights, mental health, and even correctional organizations have issued recommendations or mandates to exclude the mentally ill from such units.[159] The unfortunate fact that some

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[156] Craig Haney, *Mental Health Issues in Solitary and "Supermax" Confinement*, 49 CRIME & DELINQ. 124, 139 (2003).

[157] *Id.* at 139–40.

[158] Laura Dellazizzo, Mimosa Luigi, Charles-Édouard Giguère, Marie-Hélène Goulet & Alexandre Dumais, *Is Mental Illness Associated with Placement in Solitary Confinement in Correctional Settings? A Systematic Review and Meta-Analysis*, 29 INT'L J. MENTAL HEALTH NURSING 576, 579 (2020); Reiter, et al., *supra* note 10; Arthur T. Ryan & Jordan DeVylder, *Previously Incarcerated Individuals with Psychotic Symptoms Are More Likely to Report a History of Solitary Confinement*, 290 PSYCHIATRY RES. 113064 (2020).

[159] For example, the United Nations' so-called "Mandela Rules" on the treatment of prisoners prohibits the placement of mentally ill persons in solitary confinement. *See* UNITED NATIONS ON DRUGS

backward prison systems still place disproportionate numbers of mentally ill prisoners in solitary confinement means that there will be a number of formerly incarcerated persons who not only eventually reenter society with psychological or emotional problems that may require them to arrange and maintain access to treatment, but also that many of them will be solitary confinement survivors who must cope with its aftereffects as well.[160]

In any event, for mentally ill prisoners and all others released from solitary confinement, one of the most damaging aspects of the experience may well be its capacity to instill a sense of perpetual loneliness. If human beings are "wired to connect," then solitary confinement acts to disconnect those wires. Many people struggle to reconnect them long after returning to a social world and to the routine presence of others in their life. Some cannot successfully do so. Indeed, many prisoners in long-term solitary confinement fear that their ability to form or maintain relationships with other people will atrophy so significantly that it never regenerates. This is in many ways its cruelest and most debilitating long-term consequence, another component of the "social death" so many victims of long-term solitary confinement experience. It means that the experience of solitary confinement is not only a concentrated—indeed, "toxic"—form of social isolation that is harmful in its own right, but one that also has lasting effects, increasing the risk that its victims will be consigned to isolated and lonely lives even after they have been released from prison.

CONCLUSION

Solitary confinement represents a particularly toxic, dangerous subset of a much broader, scientifically well-documented, extremely harmful condition—the deprivation of meaningful social contact. Researchers, public health policymakers, and politicians now understand the adverse effects of social isolation, and many are devising strategies to respond to the very serious threat to personal and even societal well-being that this kind of deprivation represents. The research on this topic is compelling and has burgeoned over the last several decades. The evidence continues to mount

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& CRIME, THE UNITED NATIONS STANDARD MINIMUM RULES FOR THE TREATMENT OF PRISONERS (THE NELSON MANDELA RULES) 14 (2015), https://www.unodc.org/documents/justice-and-prison-reform/Nelson_Mandela_Rules-E-ebook.pdf [https://perma.cc/62U6-Q4SJ]. Others do as well. *See Solitary Confinement (Isolation)*, NAT'L COMM'N ON CORR. HEALTH CARE (Apr. 10, 2016), http://www.ncchc.org/solitary-confinement [https://perma.cc/3QSS-R4L7]. See also the statement from the 2018 international Santa Cruz Summit, *Santa Cruz Summit*, *supra* note 8.

[160] Perhaps not surprisingly, formerly incarcerated persons who also suffer from mental illness have more difficulty in generally successfully adjusting to postprison life. *See, e.g.*, Kristin G. Cloyes, Bob Wong, Seth Latimer & Jose Abarca, *Time to Prison Return for Offenders with Serious Mental Illness Released from Prison: A Survival Analysis*, 37 CRIM. JUST. & BEHAV. 175 (2010).

that social isolation, social exclusion, loneliness, and the deprivation of caring human touch can and do inflict serious psychological and physical damage.

As this Essay makes clear, nowhere in society are these kinds of social harms inflicted as completely, cruelly, and intentionally than in solitary confinement units. Direct studies of the terrible consequences of prison isolation are but one component of the theoretically coherent and extensive empirical database on which legal and correctional decisionmakers can and should draw in devising policies to address the harmfulness of this dangerous practice. In contrast to the now well-known adverse consequences of social isolation in society at large, the deprivations inflicted in solitary confinement units are truly extreme and forcefully impose many additional kinds of deprivation, ones that worsen the painful and damaging effects of the experience. Moreover, the toxic deprivations of solitary confinement are imposed *in addition to* the already significant and harmful pains of imprisonment per se. The negative consequences of time spent in solitary confinement are hardly *de minimis* or short-lived, but rather have the capacity to incur serious and even life-threatening damage that persists long after the experience of prison isolation, or imprisonment itself, has ended.

There are now unquestionably sound scientific reasons to radically rethink the circumstances under which solitary confinement can be humanely employed if, indeed, it can or ever should be.